



COAST SURVEY

UNITED STATES - GREAT LAKES

WISCONSIN

RECREATIONAL CHART 14916

LAKE WINNEBAGO
AND
LOWER FOX RIVER

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
COAST SURVEY

CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Imagery and Mapping Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner.

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

10th Ed., Jul. /02

Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

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HOW TO USE YOUR RECREATIONAL CHART

The purpose of this insert is to assist you in the use of this series of charts. If you are an accomplished sailor and navigator, familiar with charts and their use, then you can remove these introductory pages without affecting the use of your charts. These notes are for the use of the occasional or new chart user who sometimes has to look up the meaning of data appearing on the chart.

A. CHART VS. MAP

There are several major differences between a chart and a map, the main one being that a chart shows water depths while a map does not. Whereas a map tries to show every detail and elevation on land with a uniform blue for water, a chart shows only enough of the land features for orientation while contouring the water depths.

B. INDEX

The index of sheets shows you where each sheet of the series fits. To assist you in moving from one sheet to the next the sheets overlap and the borders of the individual sheets give the number of the adjoining sheet.

C. GENERAL CHART INFORMATION

Each sheet has the following characteristics:

- Scale: Large, in order to show all navigationally important detail. A scale of 1:15,000 means that one inch on the chart represents 15,000 inches on the ground.
- Distance: Bar scales are provided for measurement in both feet and miles.
- Colors: Buff is used for all land areas, blue tint for water 1 to 6 ft deep, light blue tint for water 6 to 12 ft deep, white for water over 12 ft deep, yellowish-green for shallow areas that are uncovered during periods of low water, black for the shoreline and for man-made structures, and magenta for lights and important notes.

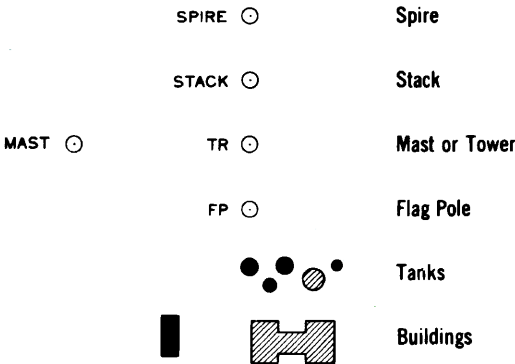
D. DEPTHS

The main purpose of a chart is to depict or indicate depths in order for you to stay in waters deep enough for your boat. To do this, you have to know the draft of your own craft (the depth of water required to keep any part of your boat from touching bottom) and the depth of the area you are moving in. Where the water is deep enough to pass your craft safely, you may cruise at will. Where it is not, you should not enter.

All point depths (soundings) and depth contours are given in feet below Low Water Datum. This is an artificial fixed water surface used as a base for measurement, and is usually lower than the water levels which normally occur during the navigation season. The fluctuations to be expected along with the actual record highs, lows, and 10-year average, are shown on the index (first) sheet for the chart folio. Generally, during the boating season the actual water level remains ½ to 1' foot above Low Water Datum and the actual depths are correspondingly greater than charted depths, so the depths shown on the chart can be used with a slight margin of safety. But to be sure, particularly during periods of low water levels, the latest Monthly Bulletin of Lake Levels should be used with your chart. In addition, local newspapers and radio stations carry announcements of water levels and forecasts.

E. LOCATING YOURSELF

1. **Landmarks**—The secondary purpose of a chart, to enable you to know your boat's location, is made easy within sight of land by the use of the prominent shore line landmarks and numbered buoys or watermarkers. The most obvious landmarks from the water are large smoke stacks, towers, masts and tanks. Knowing the chart symbols for these will assist you quickly to orient your chart:



On the open lake at some distance from land, the problem of location is more difficult, but from the standpoint of sufficient depths, is not as important since the water will generally be deep enough for small craft operation. However, you should check your chart to be sure.

E. 2. **Buoys**—The "highway" markers of the water channels are the numbered buoys. These take several sizes and shapes such as cans (squat cylinders) and nuns (cylinders with conical tops) and are placed along the sides of a channel, at turns, at points where channels divide, at harbor and marina entrances, and to mark certain obstructions, such as shoals and other underwater hazards. Those along a given channel are placed in an increasing numbered sequence moving upstream or from seaward with the even-numbered markers on the starboard (right hand) side and the odd-numbered on the port (left hand) side of the channel. In addition, the even-numbered (starboard) markers are red in color while the odd-numbered (port) markers are green. Naturally, this sequence is reversed if you are moving downstream or seaward, with even (red) on your port and odd (green) on your starboard. Identification of such aids while you are cruising not only directs or warns you but also gives you an excellent check of your position. The symbol for a floating buoy is:

Examples of floating buoys are:

Chart Symbol	Actual Appearance	Name	Meaning
		Green Can No. 7	Mark left side of channel (when traveling upstream)
		Red Nun No. 4	Mark right side of channel (when traveling upstream)
		Horizontally Banded Can (unnumbered)	Marks an obstruction or junction of two channels
		Vertically Striped Can (unnumbered)	Marks the fairway (middle of the channel)

3. **Other Location Aids**—The names of many factories, docks, and marinas can be read from the water and likewise identified on the chart to assist you in locating yourself. Other aids are bridges, overhead cables, and sometimes partly submerged objects that can be located on the chart as well as physically seen.

F. NIGHT NAVIGATION

If you must operate your craft after dark, the chart will help you to both locate yourself and point the way—by use of the navigation lights. Some of these lights are stationary, while others are floating or buoys.

The symbol for a stationary light is a black dot with a magenta flare:






A floating light symbol is the same as that for a buoy, with a magenta disc around it:

Lighted buoys or markers are numbered and colored in the same way as unlighted buoys. The additional letters have the following meanings:

Lt	Light	Iso	Isophase
Ref	Reflector	F	Fixed
Vert	Vertical	Fl	Flashing
Y	Yellow	IQ	Interrupted Quick
G	Green	Oc	Occulting
Or	Orange	Q	Quick
R	Red	Mo (A)	Short-long Flashing
W	White		
B	Black		

The different colors of lights have no meaning other than making it possible to tell them apart, except that lighted green buoys marking the port side of a channel when proceeding from seaward show a green light, while lighted red buoys marking the starboard side show a red light.

Examples:




-  **G "23"**
Fl G 4s Green Buoy No. 23 (port side going upstream) with a flashing Green Light
-  **R "28"**
Q R Red buoy No. 28 (starboard side going upstream) with Quick Flashing Red Light
-  **Fl G "3"** Stationary Light No. 3, with Flashing Green Light
-  **Fl 4s 9 St M** Stationary Light, Flashing White, visible for 9 statute miles
-  **Fl (2)** Stationary White Light, flashing in groups of two or more flashes

Range Lights—You can steer down the center of a navigation channel or properly enter a harbor by following a set of range lights, where available. These are fixed lights, higher than the usual buoy lights, some distance apart but in line with the channel, and with the rear (farther) light higher than the front (closer) light:






The lights are connected on the chart with a broken line and the true course heading toward them is shown. A range is used as follows:

If you are moving **toward** the range lights and:

You see this	It means
	You are in the channel and on course.
	You are left of proper course, guide right until lights are in line.
	You are right of proper course, guide left until lights are in line.

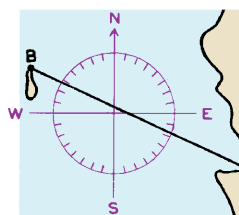
If you are moving **away** from the range lights, the opposite is true:

You see this	It means
	You are to the right of course, guide left until lights are in line.
	You are to the left of course, guide right until lights are in line.
	On course.

G. NAVIGATING BY COMPASS

It is a simple matter to use your chart for open water navigation. The only tools you need are a compass, a straightedge and a protractor. On each sheet of your volume is a compass rose made up of two circles. The outer circle is aligned with true north and the north-south or vertical lines on your chart. The inner circle is aligned with magnetic north for the area covered by that sheet. Each sheet should be checked since the magnetic variation (the difference between true north and magnetic north) varies from sheet to sheet, and is given in the center of the circle.


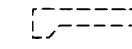



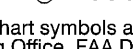

To plot a course, draw a light line on the chart connecting the points A & B that you are traveling between. Using your protractor, read the true courses as, say 295° in the figure shown. (If you were traveling from B to A, the course would be 180° different from 295°, i.e., 115°). To convert this chart course to a magnetic course, determine if the magnetic variation is west or east. If west, then add the variation to the true value—if east, subtract. Therefore, if the variation were 3°30'W, then 295° + 3°30' = 298½° would be the magnetic course from A to B.



More complete instructions in plotting courses and using the compass (especially with regard to compass deviations) may be obtained from local boating groups.

H. OTHER CHART SYMBOLS

Some of the other more common symbols you will find on your chart are:

	Submerged cable (electrical, telegraph, telephone, etc.) – do not anchor
	Limits of dredging
	Rock
	Area uncovers at low water
	Swamp area
	Triangulation Station (fixed point for surveying, usually not visible from a boat).
	National Weather Service Signal Station

For complete list of chart symbols and abbreviations see Chart No. 1 available from the National Aeronautical Charting Office, FAA Distribution Division (AVN-530), Riverdale, Maryland 20737.

I. SERVICES AND PUBLICATIONS

Some marinas, boatyards, docks, yacht clubs and ramps are shown along the shore line. Various types of services and supplies can be obtained at these locations. In some areas, one of the major oil companies may publish a map listing these facilities.

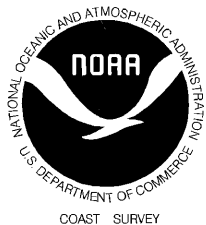
Other publications with additional information are:

- "Light List -- Vol VII: Great Lakes" -- USCG-COMDTPUB P16502.7
- "Rules and Regulations for Uninspected Vessels" -- USCG-258
- "Local Notice to Mariners" -- USCG (issued periodically)
- "Notice to Mariners" -- NIMA (issued periodically)
- "Recreational Boating Guide" -- USCG-340
- "Pleasure Craft" -- USCG-290
- "Navigation Rules" -- USCG-COMDTPUB M16672.2C
- "Nautical Chart Symbols, Abbreviations and Terms" -- NOS-Chart No. 1

Light List and other USCG publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; from the GPO Branch Bookstores located in many cities; or from GPO Sales Agents located in principal ports.

Keep your chart up to date—a new chart every couple of years is cheaper than a new bottom in your boat. Charts can be purchased at following locations:

National Aeronautical Charting Office
FAA Distribution Division (AVN-530)
Riverdale, Maryland 20737-1199
Counter Sales: 6501 Lafayette Ave., Riverdale, Maryland
(or from authorized sales agents)



LAKE WINNEBAGO AND LOWER FOX RIVER

WISCONSIN

Polyconic Projection
North American Datum of 1983
(World Geodetic System 1984)

SOUNDINGS IN FEET

NOTE B

The channel legend reflects the Corps of Engineers project depth. The Corps of Engineers publishes the controlling depth periodically in the U.S. Coast Guard Local Notice to Mariners. For further information on channel depths, direct inquiries to Office of the District Engineer, Corps of Engineers, Detroit, Michigan.

RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

RACING BUOYS

Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other privately maintained buoys are not all listed in the U.S. Coast Guard Light List.

NOTES

PLANES OF REFERENCE OF THIS CHART (Low Water Datum)

LAKE WINNEBAGO..... 745.8 ft.
FOX RIVER (Between Locks)..... See table below
LAKE MICHIGAN..... 577.5 ft.

Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).

AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1.

BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6.

AUTHORITIES. Hydrography and topography by the National Ocean Service, Coast and Geodetic Survey, with additional data from the Corps of Engineers, Geological Survey, and U.S. Coast Guard.

NOTE Z NO-DISCHARGE ZONE, 40 CFR 140

This chart falls entirely within the limits of a No-Discharge Zone (NDZ). Under the Clean Water Act, Section 312, all vessels operating within a No-Discharge Zone (NDZ) are completely prohibited from discharging any sewage, treated or untreated, into the waters. Commercial vessel sewage shall include graywater. All vessels with an installed marine sanitation device (MSD) that are navigating, moored, anchored, or docked within a NDZ must have the MSD disabled to prevent the overboard discharge of sewage (treated or untreated) or install a holding tank. Regulations for the NDZ are contained in the U.S. Coast Pilot. Additional information concerning the regulations and requirements may be obtained from the Environmental Protection Agency (EPA) web site: http://www.epa.gov/owow/oceans/regulatory/vessel_sewage/.

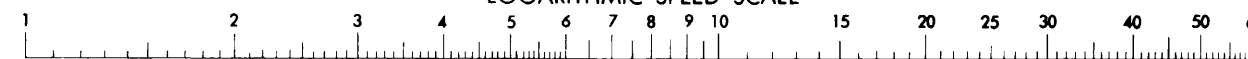
NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notices to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio, or at the Office of the District Engineer, Corps of Engineers in Detroit, Michigan.

Refer to charted regulation section numbers.

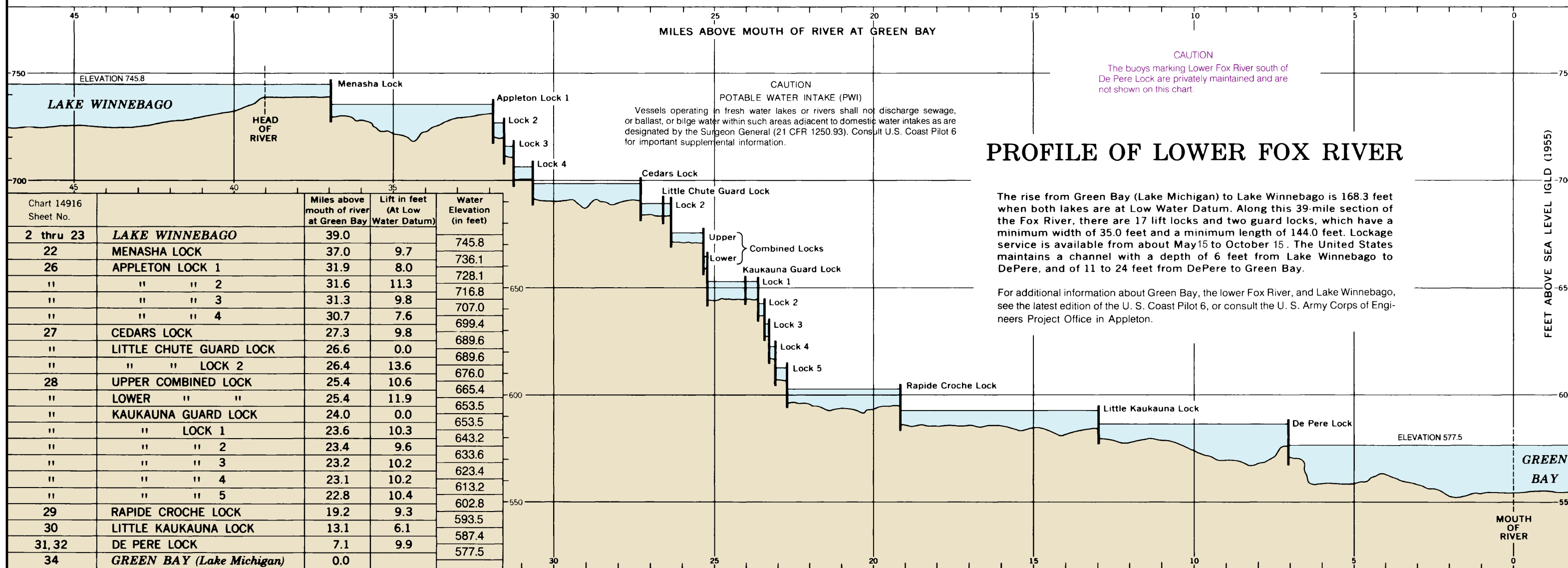
Ⓟ Pump-out facilities

LOGARITHMIC SPEED SCALE



To find SPEED, place one point of dividers on distance run (in any unit) and the other on minutes run. Without changing divider spread, place right point on 60 and left point will then indicate speed in units per hour. Example: with 4.0 nautical miles run in 15 minutes, the speed is 16.0 knots

MILES ABOVE MOUTH OF RIVER AT GREEN BAY



PROFILE OF LOWER FOX RIVER

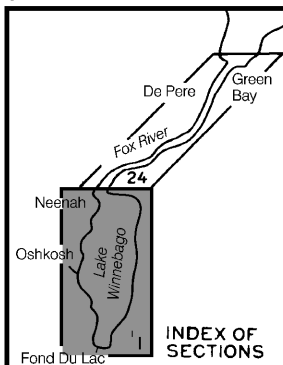
The rise from Green Bay (Lake Michigan) to Lake Winnebago is 168.3 feet when both lakes are at Low Water Datum. Along this 39-mile section of the Fox River, there are 17 lift locks and two guard locks, which have a minimum width of 35.0 feet and a minimum length of 144.0 feet. Lockage service is available from about May 15 to October 15. The United States maintains a channel with a depth of 6 feet from Lake Winnebago to DePere, and of 11 to 24 feet from DePere to Green Bay.

For additional information about Green Bay, the lower Fox River, and Lake Winnebago, see the latest edition of the U. S. Coast Pilot 6, or consult the U. S. Army Corps of Engineers Project Office in Appleton.

Chart 14916 Sheet No.		Miles above mouth of river at Green Bay	Lift in feet (At Low Water Datum)	Water Elevation (in feet)
2 thru 23	LAKE WINNEBAGO	39.0		745.8
22	MENASHA LOCK	37.0	9.7	736.1
26	APPLETON LOCK 1	31.9	8.0	728.1
"	" " 2	31.6	11.3	716.8
"	" " 3	31.3	9.8	707.0
"	" " 4	30.7	7.6	699.4
27	CEDARS LOCK	27.3	9.8	689.6
"	LITTLE CHUTE GUARD LOCK	26.6	0.0	689.6
"	" " LOCK 2	26.4	13.6	676.0
28	UPPER COMBINED LOCK	25.4	10.6	665.4
"	LOWER " "	25.4	11.9	653.5
"	KAUKAUNA GUARD LOCK	24.0	0.0	653.5
"	" " LOCK 1	23.6	10.3	643.2
"	" " " 2	23.4	9.6	633.6
"	" " " 3	23.2	10.2	623.4
"	" " " 4	23.1	10.2	613.2
"	" " " 5	22.8	10.4	602.8
29	RAPIDE CROCHE LOCK	19.2	9.3	593.5
30	LITTLE KAUKAUNA LOCK	13.1	6.1	587.4
31, 32	DE PERE LOCK	7.1	9.9	577.5
34	GREEN BAY (Lake Michigan)	0.0		577.5

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INDEX TO SHEETS OF LAKE WINNEBAGO WISCONSIN

NOTE D CAUTION

Mariners are warned that numerous uncharted stakes and fishing structures, some submerged, may exist in the area of this chart. Such structures are not charted unless known to be permanent.

WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot 6 for details.

HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 must be corrected an average of 0.036" southward and 0.374" westward to agree with this chart.

CAUTION

SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:



Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging or trawling.

Covered wells may be marked by lighted or unlighted buoys.

CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.

During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

CAUTION

Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

CAUTION

BASCULE BRIDGE CLEARANCES

For bascule bridges, whose spans do not open to a full upright or vertical position, unlimited vertical clearance is not available for the entire charted horizontal clearance.

CAUTION

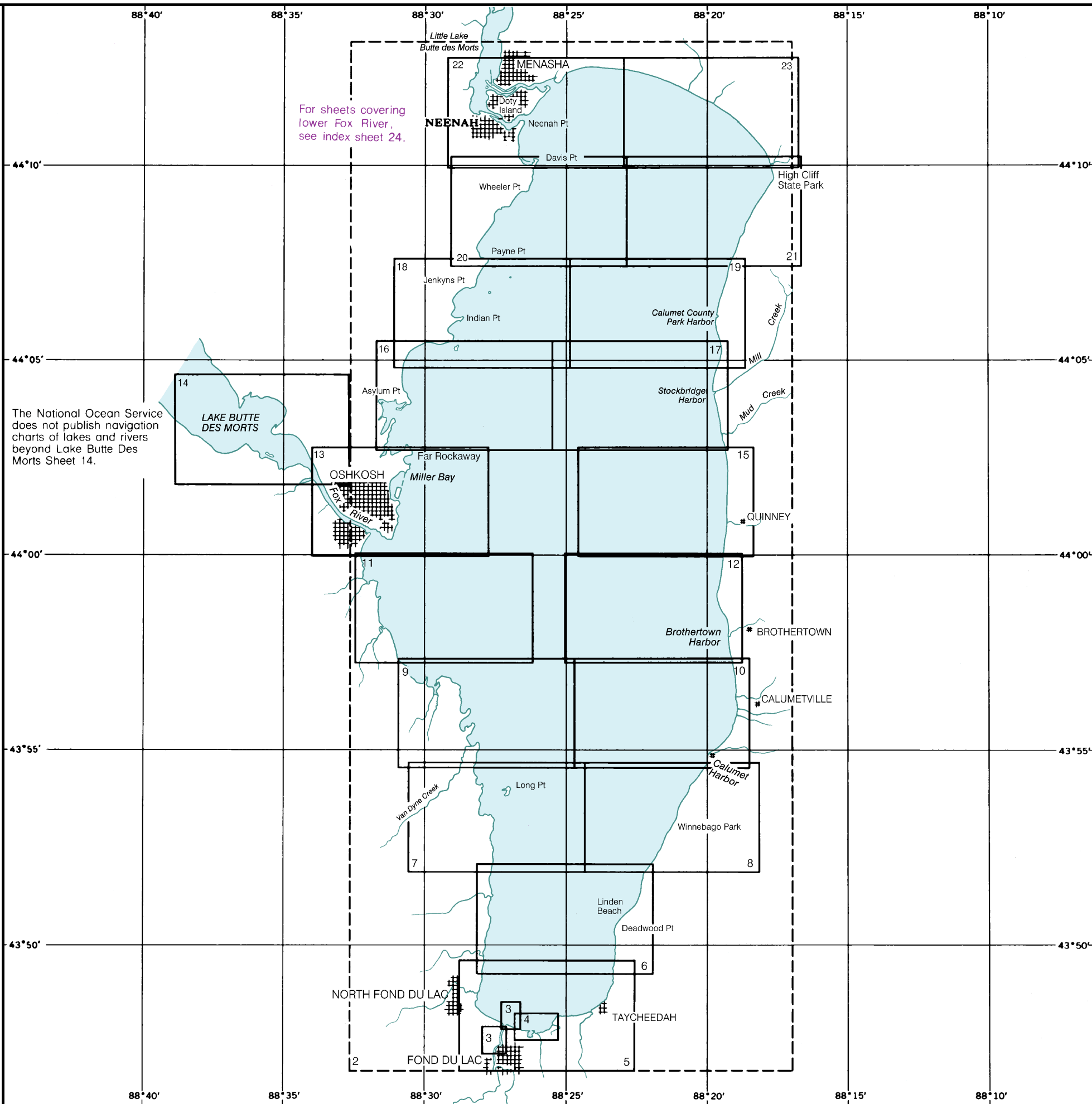
Only marine radiobeacons have been calibrated for surface use. Limitations on the use of certain other radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Imagery and Mapping Agency Publication 117.

Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.

Station positions are shown thus:
○ (Accurate location) ◦ (Approximate location)

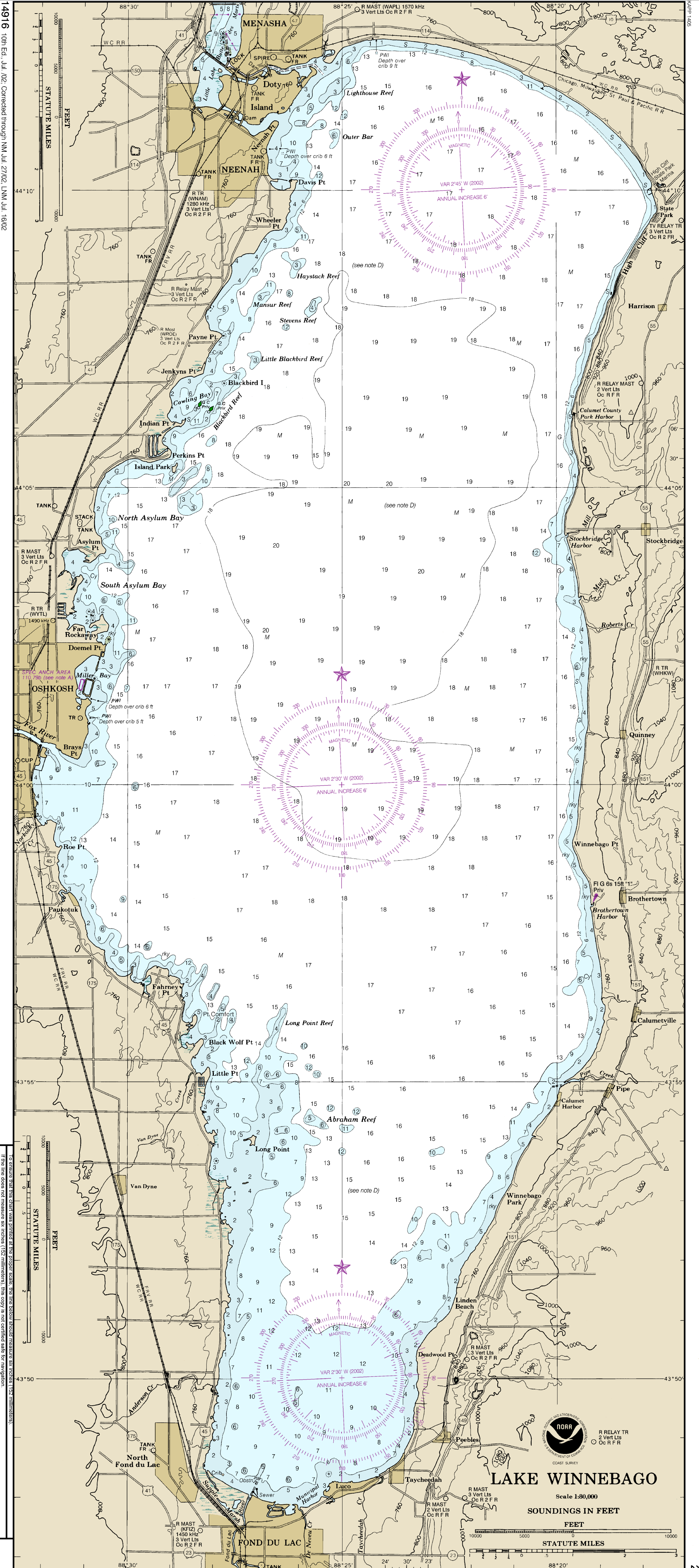
CAUTION

Improved channels shown by broken lines are subject to shoaling, particularly at the edges.



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Last Correction: 3/5/2010. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

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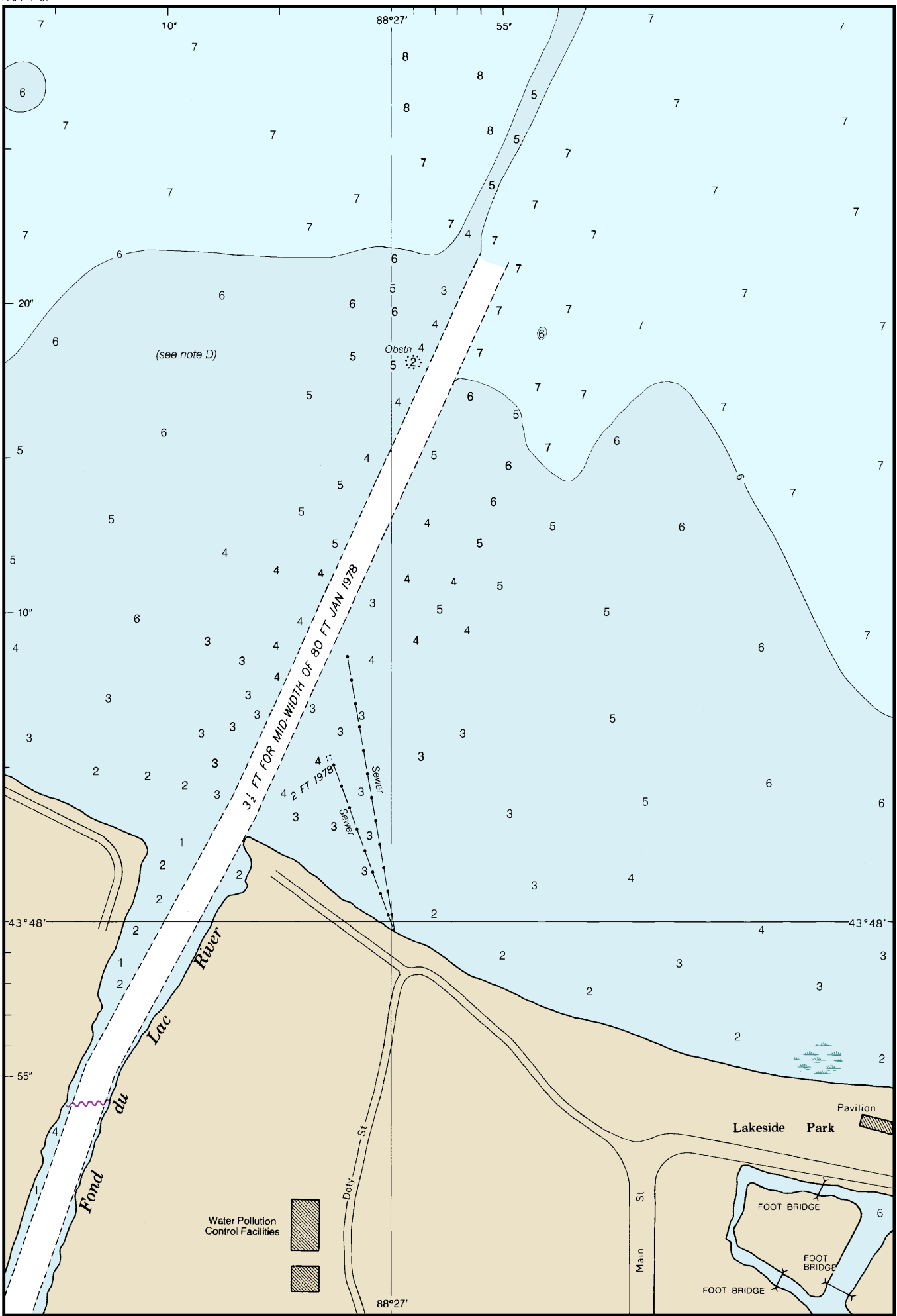


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JOINS LOWER RIGHT

KAPP 1407



JOINS UPPER LEFT

JOINS 4

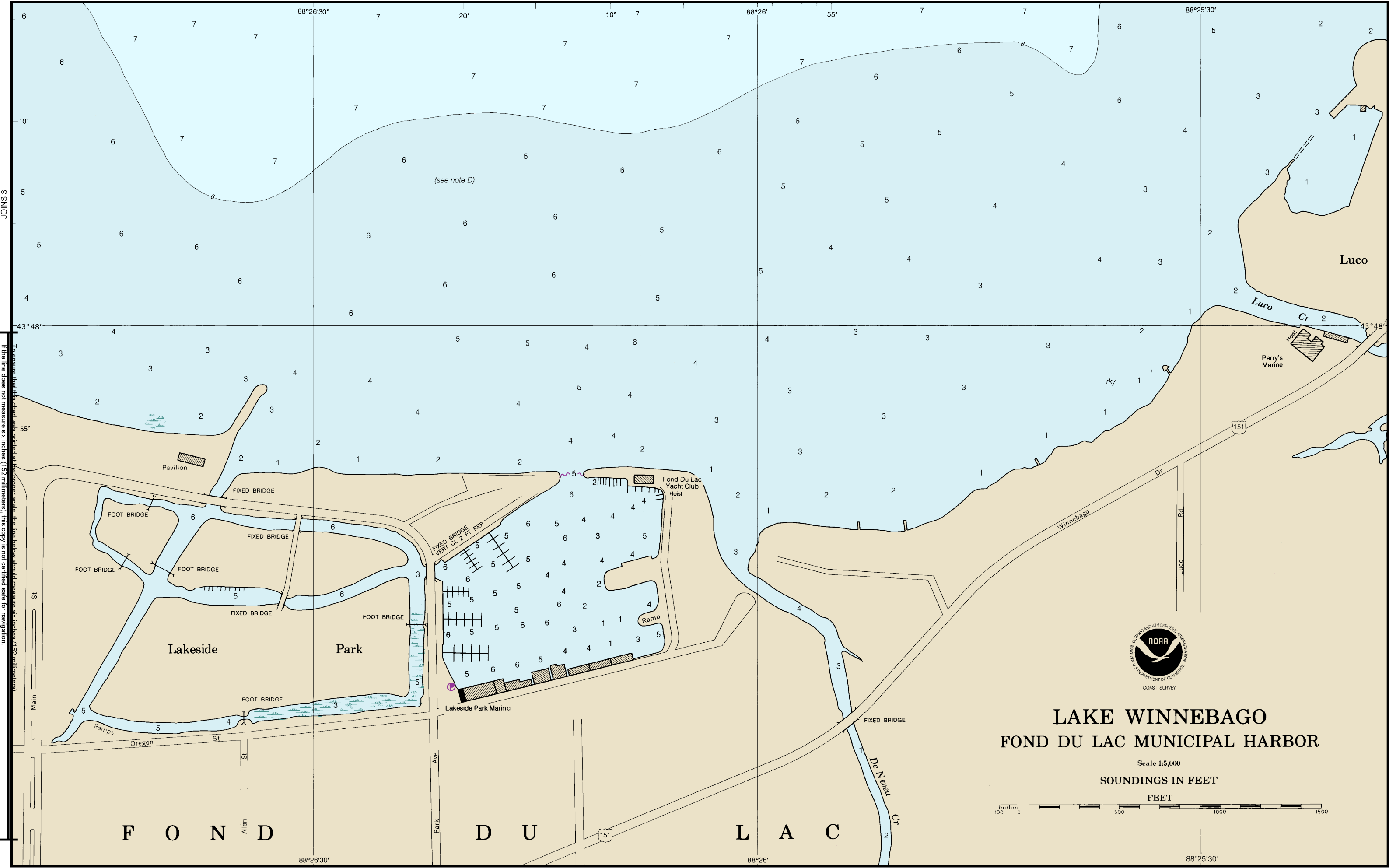
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JOINS 3

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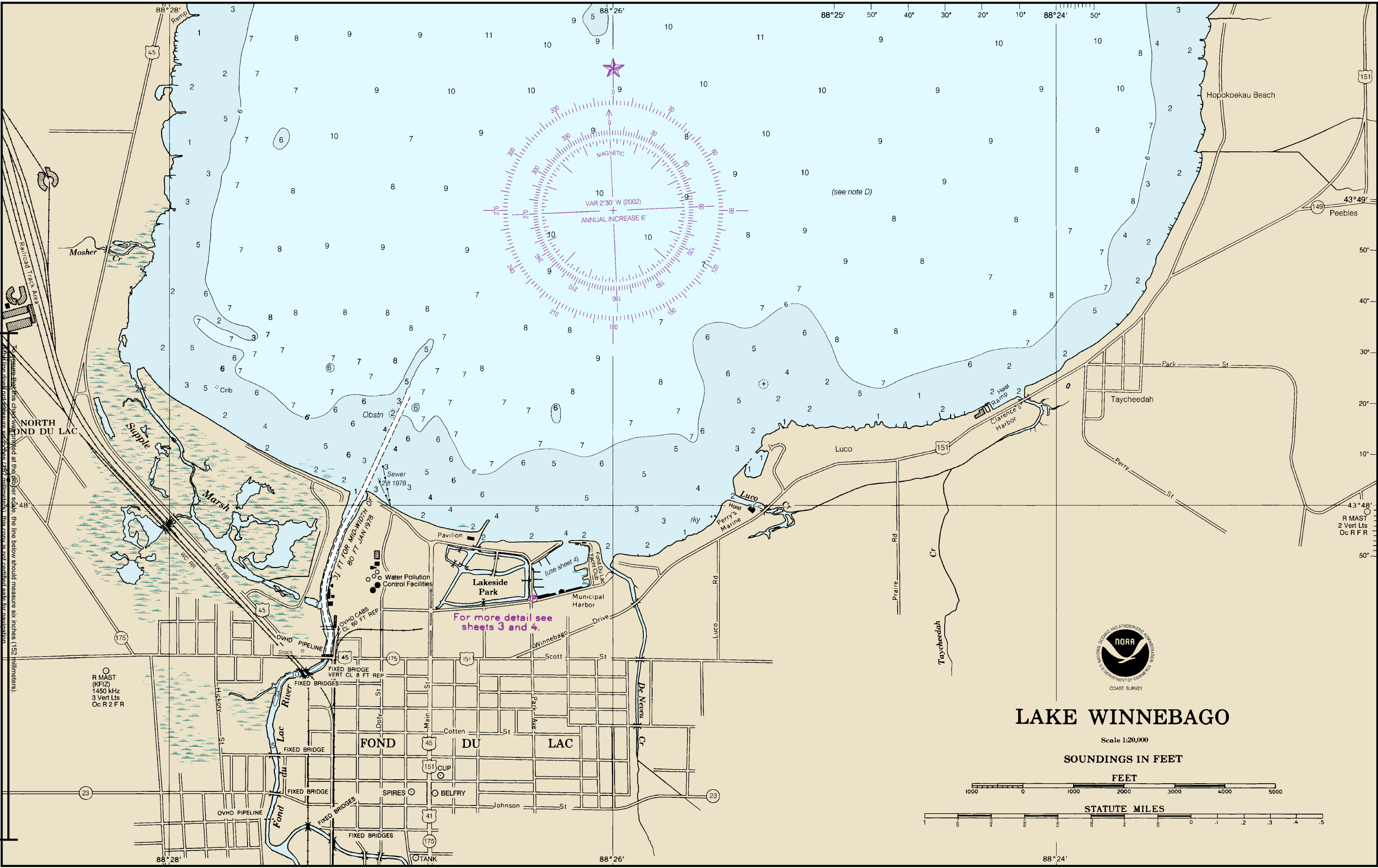


LAKE WINNEBAGO
FOND DU LAC MUNICIPAL HARBOR

Scale 1:5,000
SOUNDINGS IN FEET
FEET
100 0 500 1000 1500

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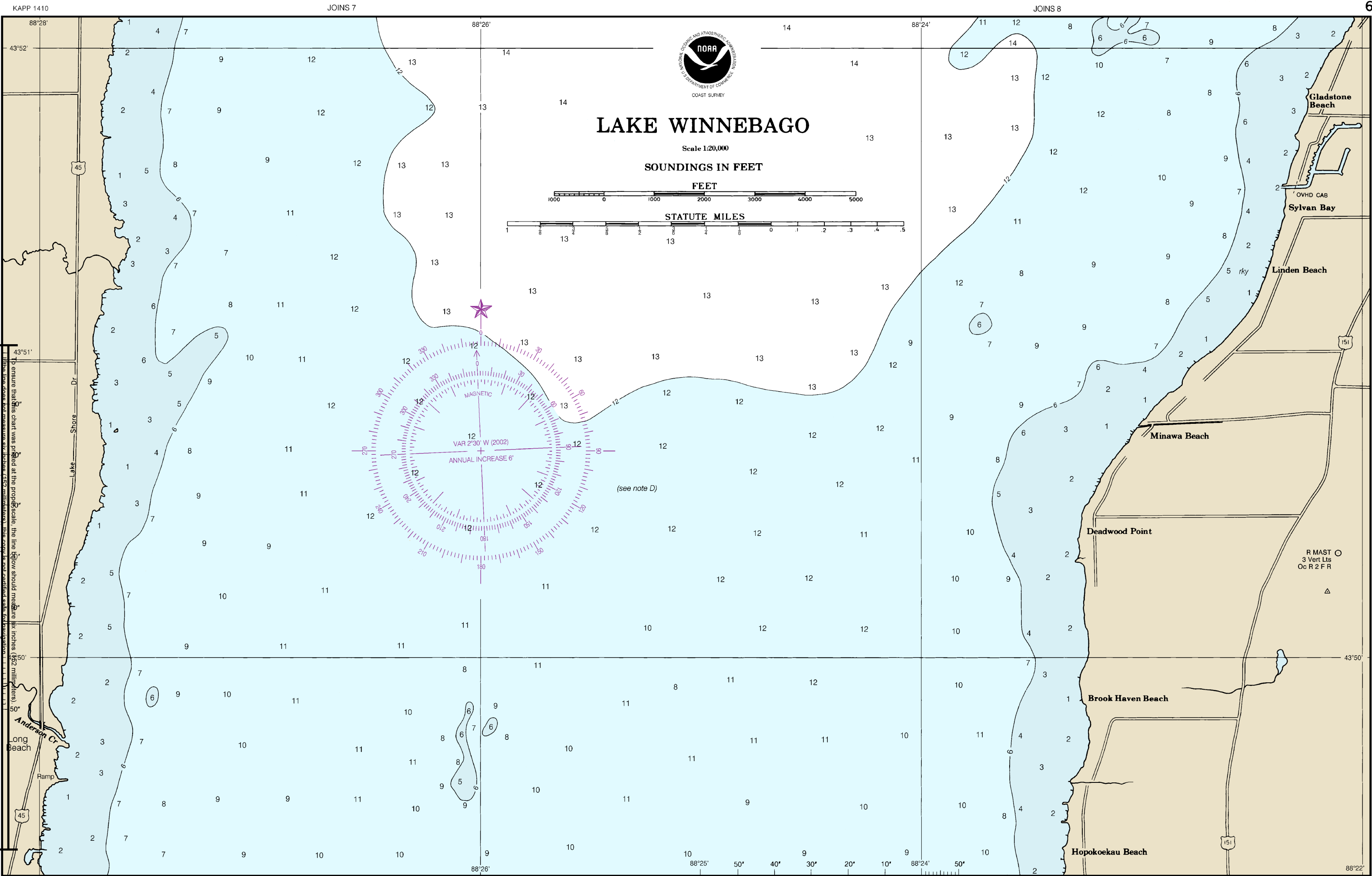
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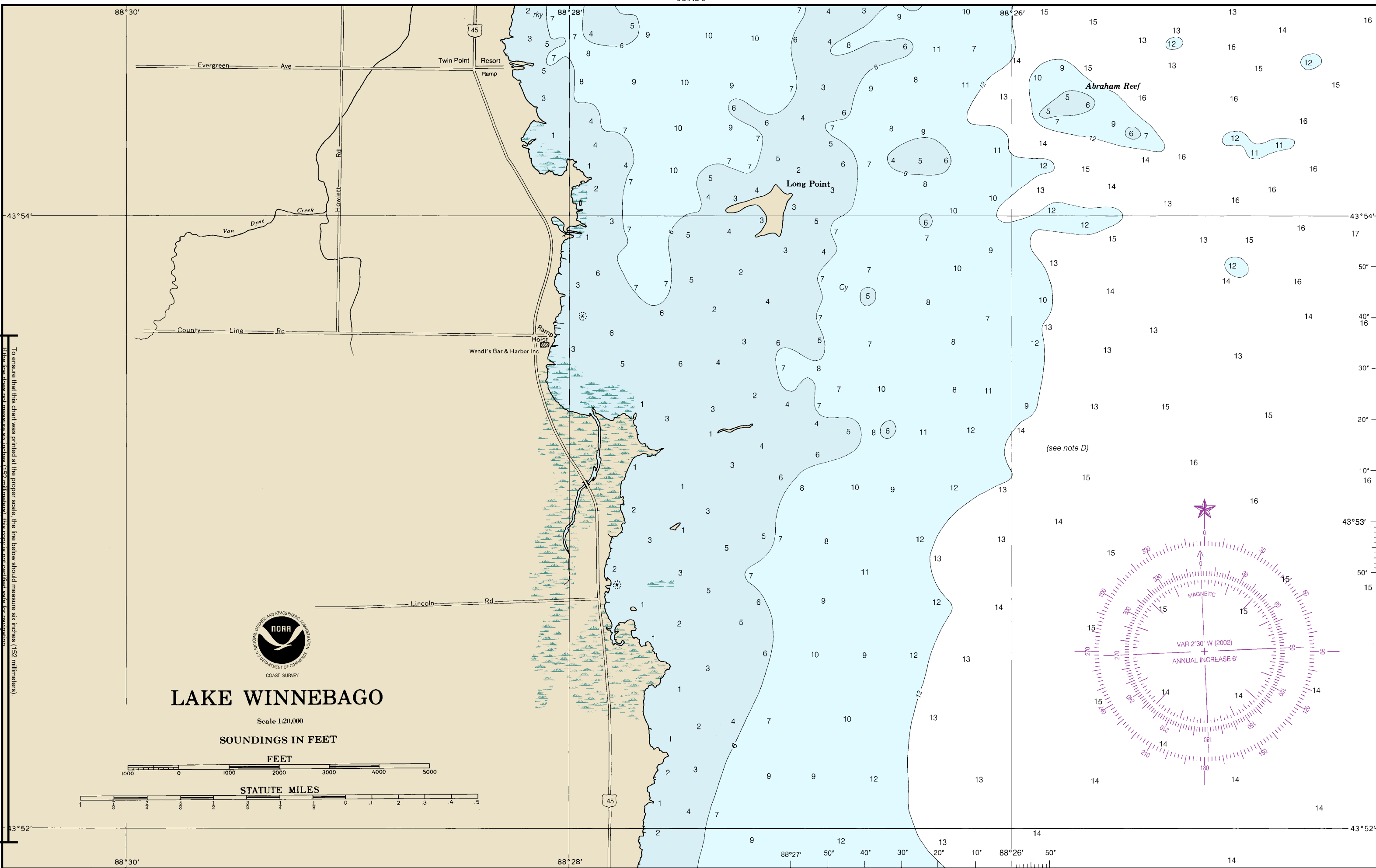


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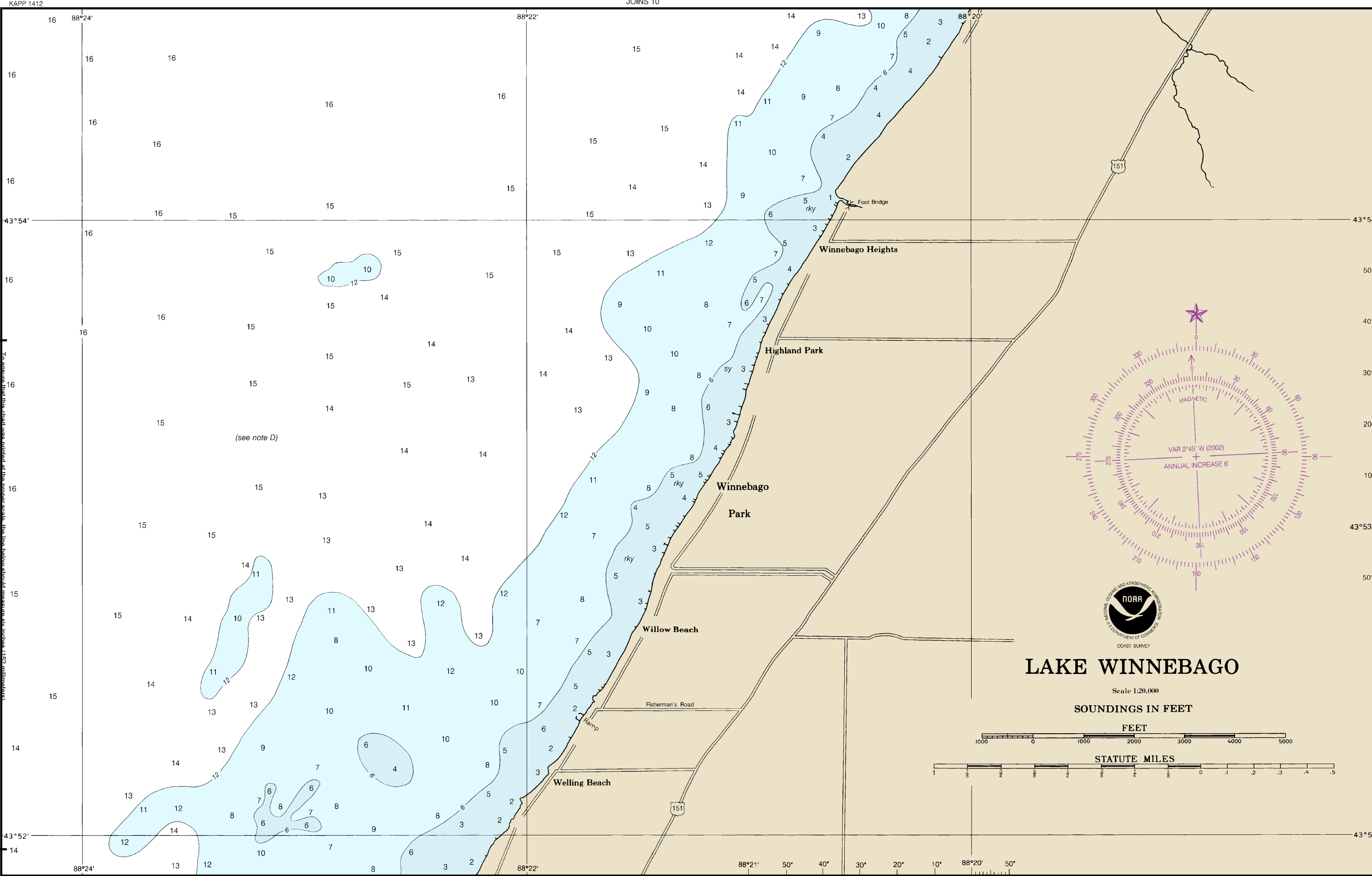
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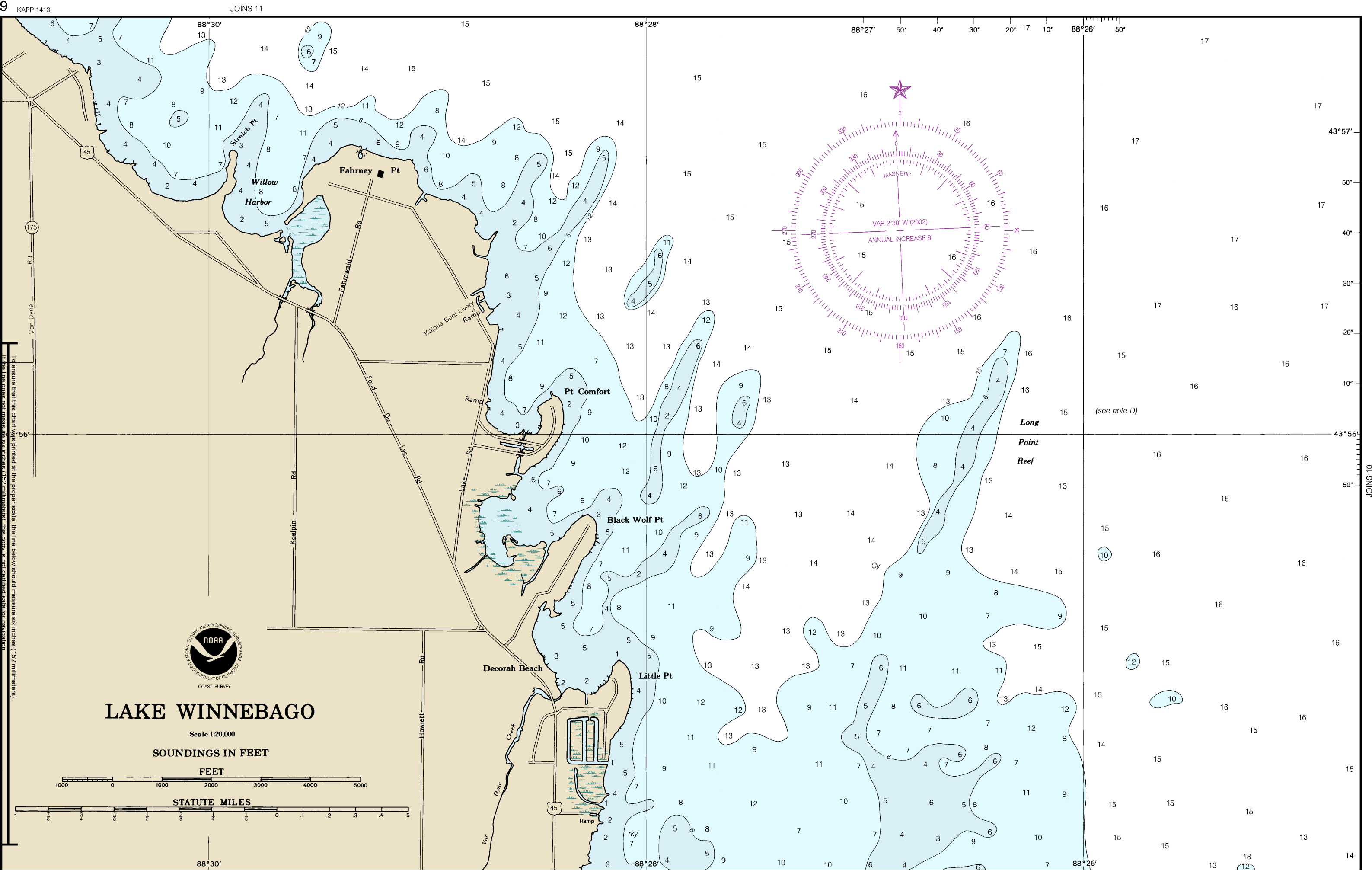
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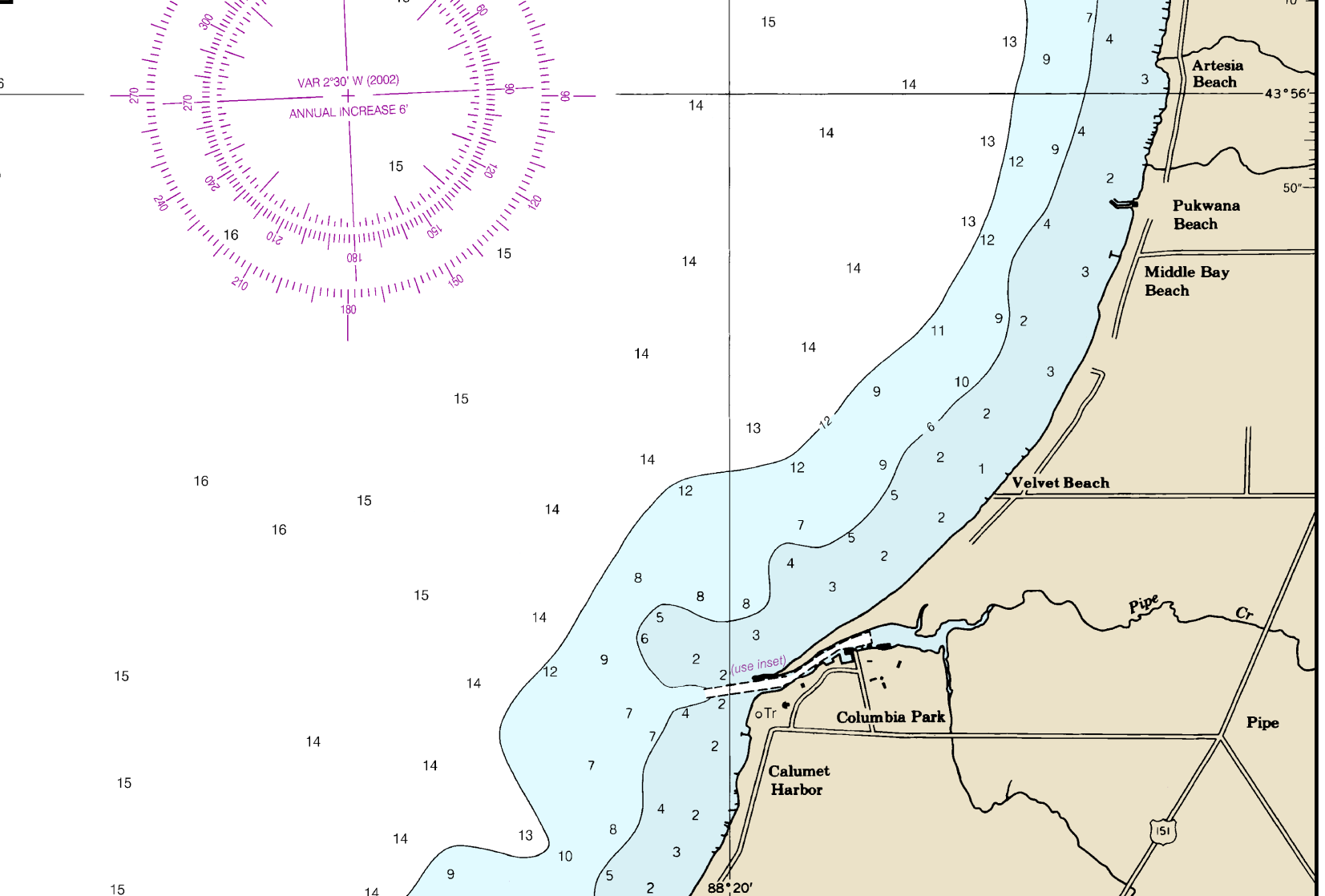
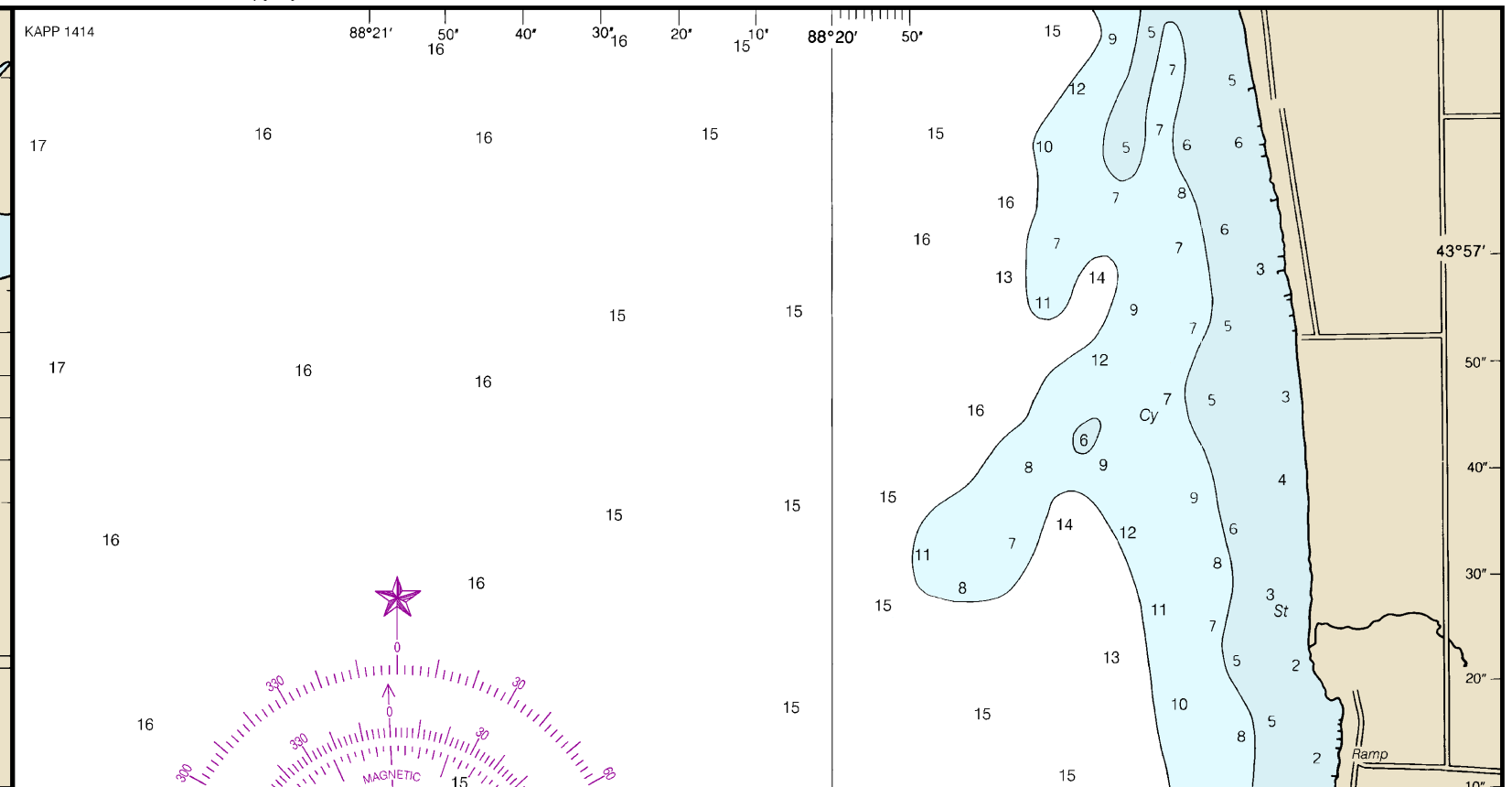
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Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).

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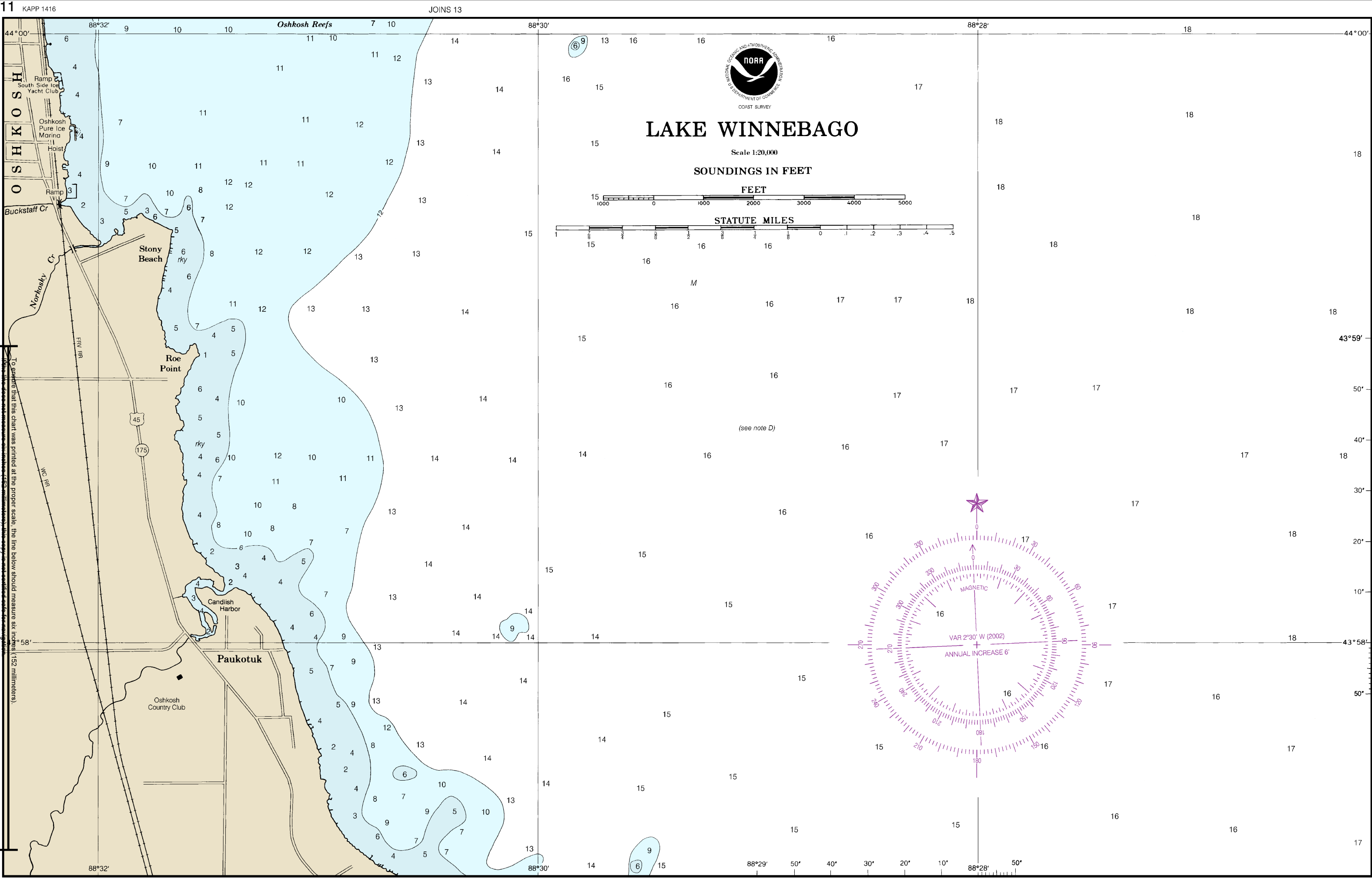
(meters).

JOINS 8

JOINS 8

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).

If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

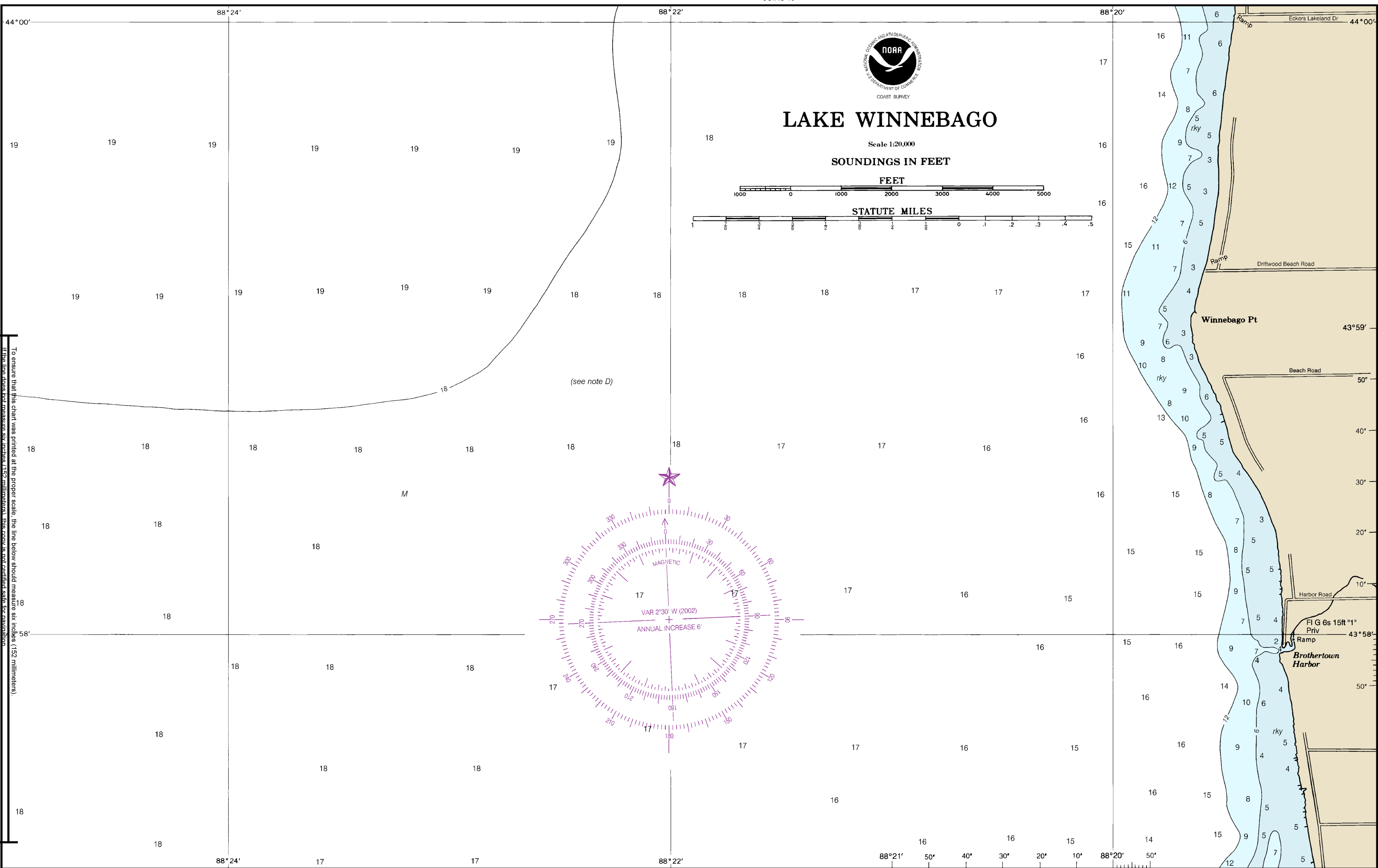


14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

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14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

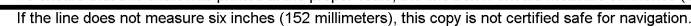
JOINS 10

Last Correction: 3/5/2010. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
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The National Ocean Service does not publish navigation charts of lakes and rivers beyond Lake Butte Des Morts Sheet 14.



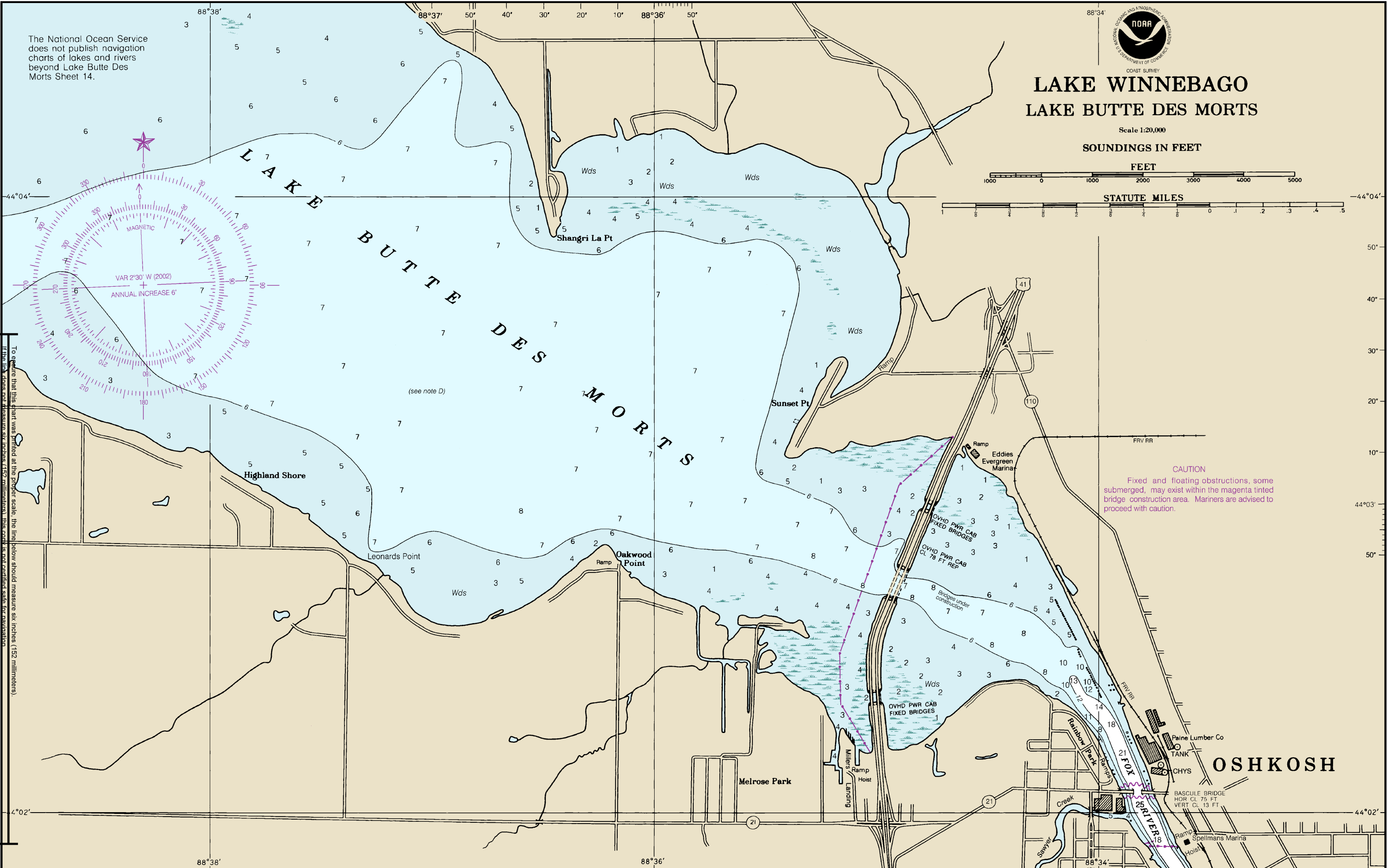
LAKE WINNEBAGO LAKE BUTTE DES MORTS

Scale 1:20,000

SOUNDINGS IN FEET

FEET

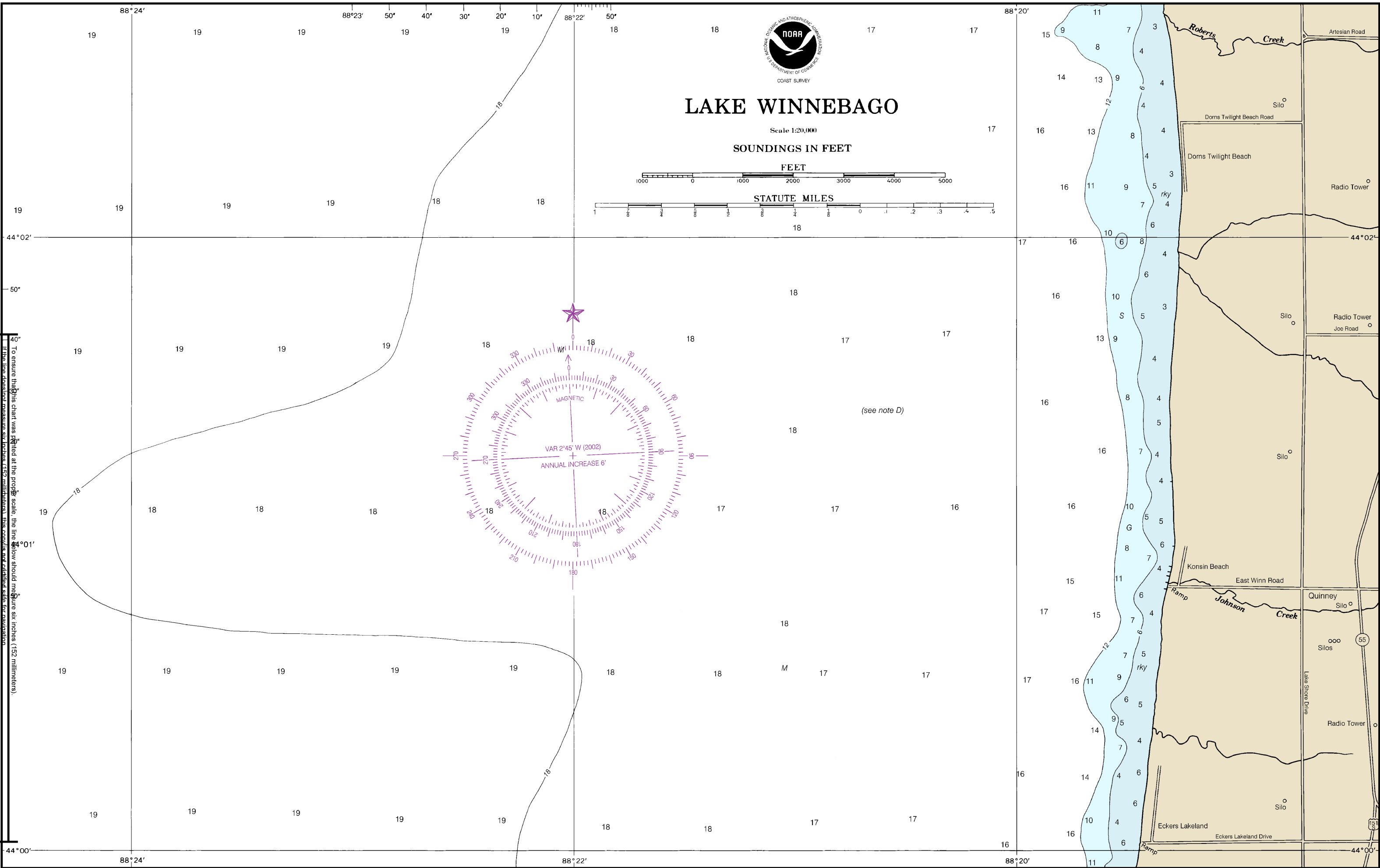
STATUTE MILES



14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

Last Correction: 11/14/2012. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

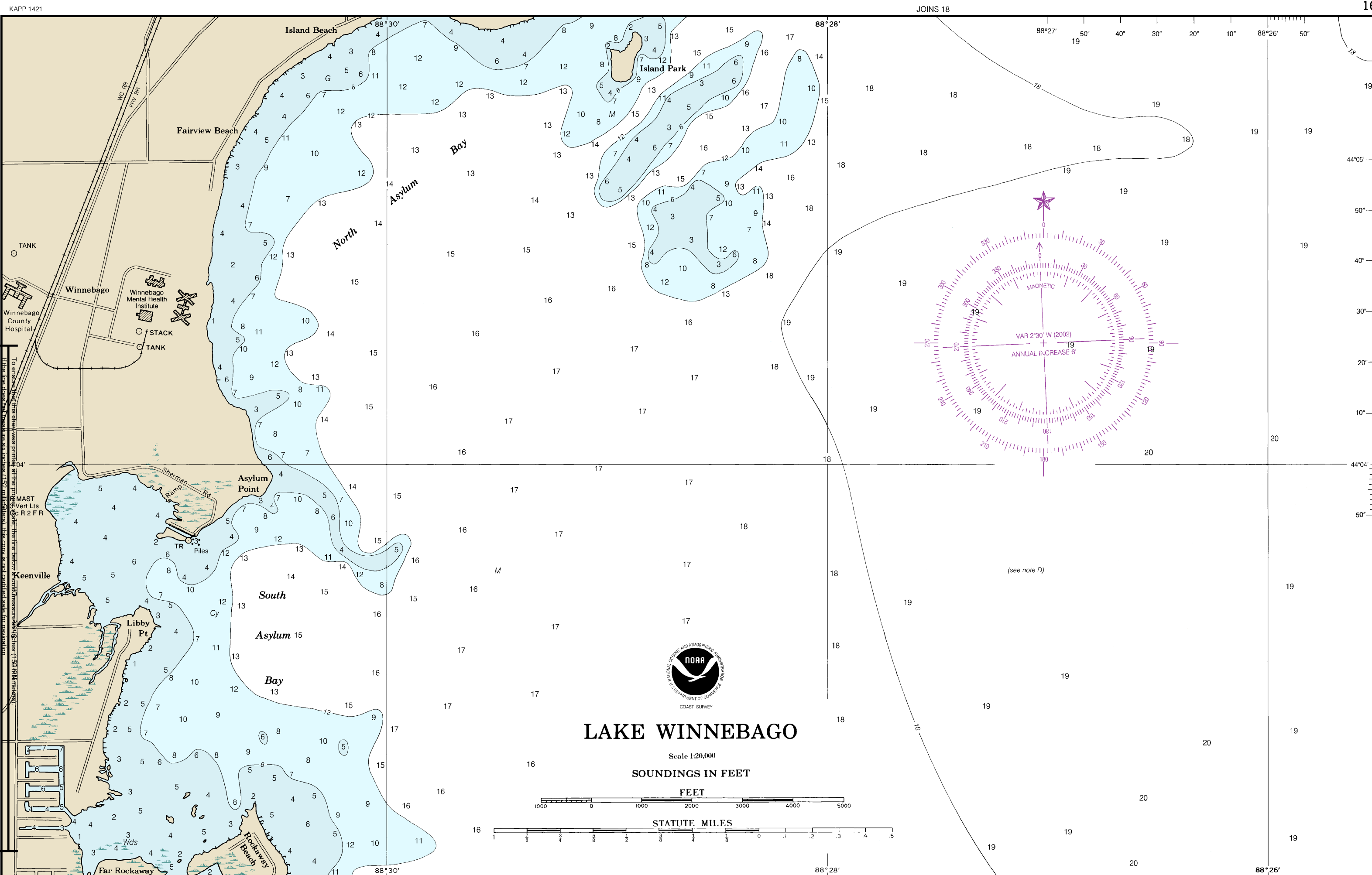
JOINS13



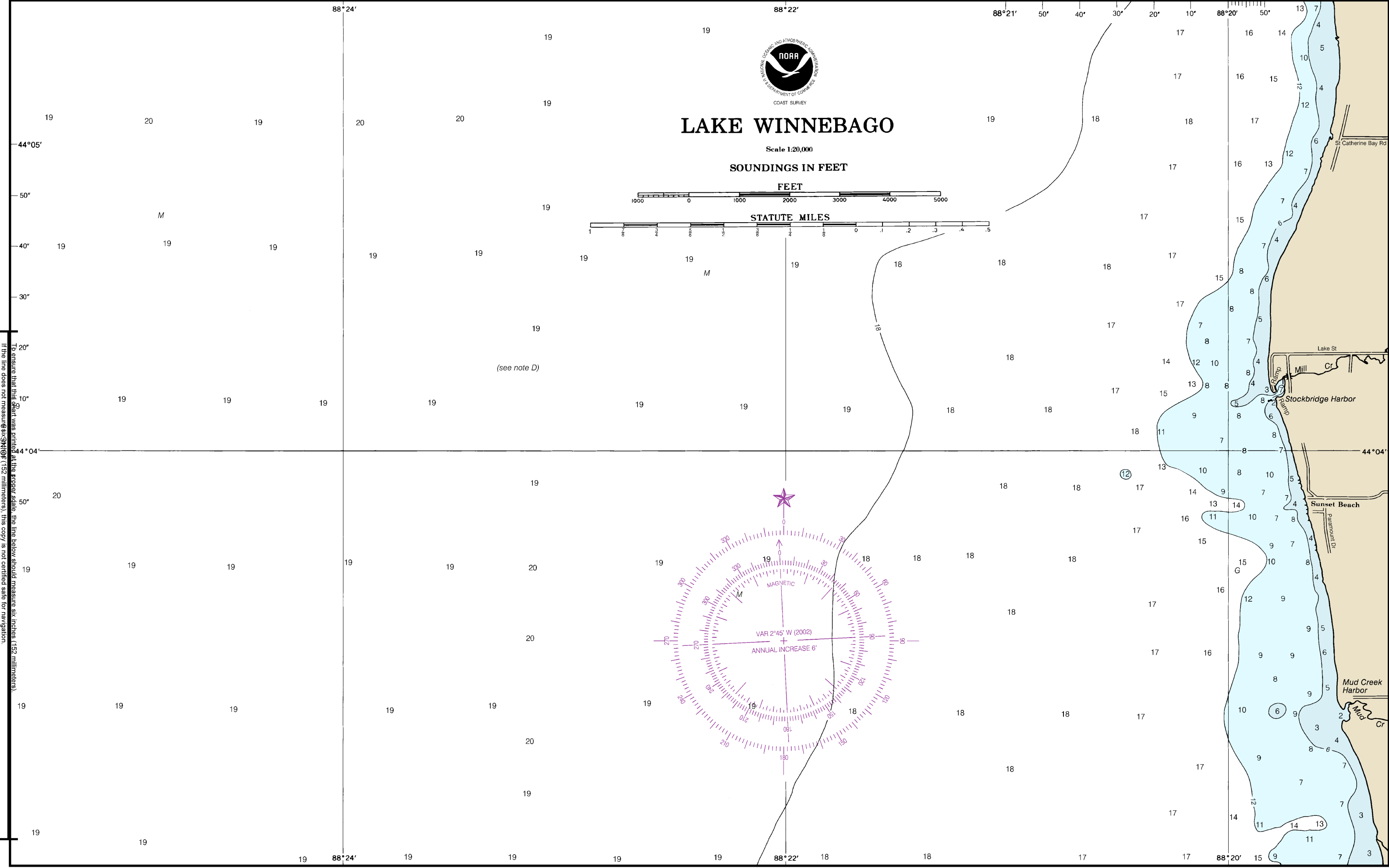
14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

JOINS 12

Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)



14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02
Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)



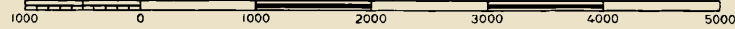


LAKE WINNEBAGO

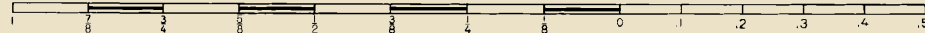
Scale 1:20,000

SOUNDINGS IN FEET

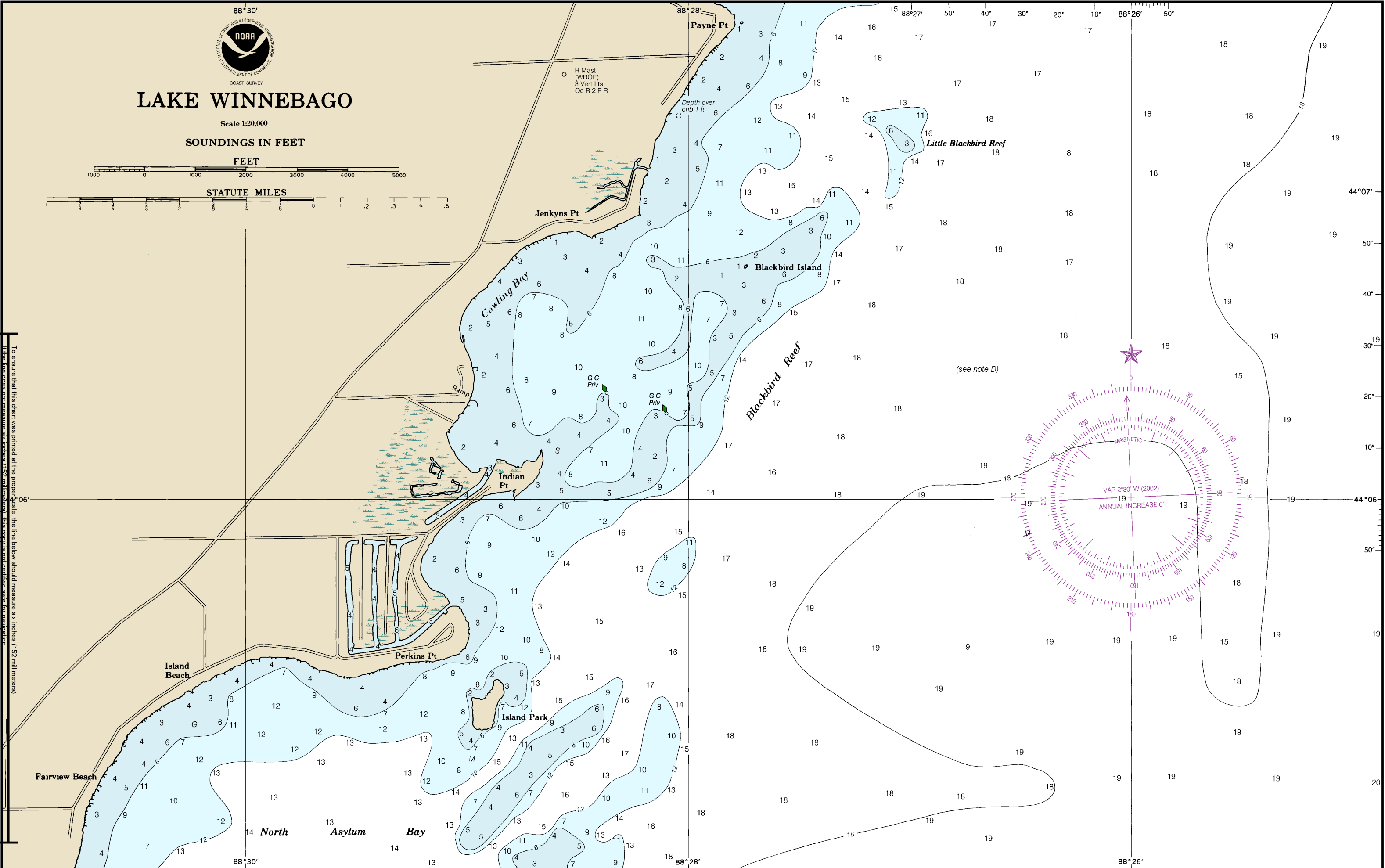
FEET



STATUTE MILES



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14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

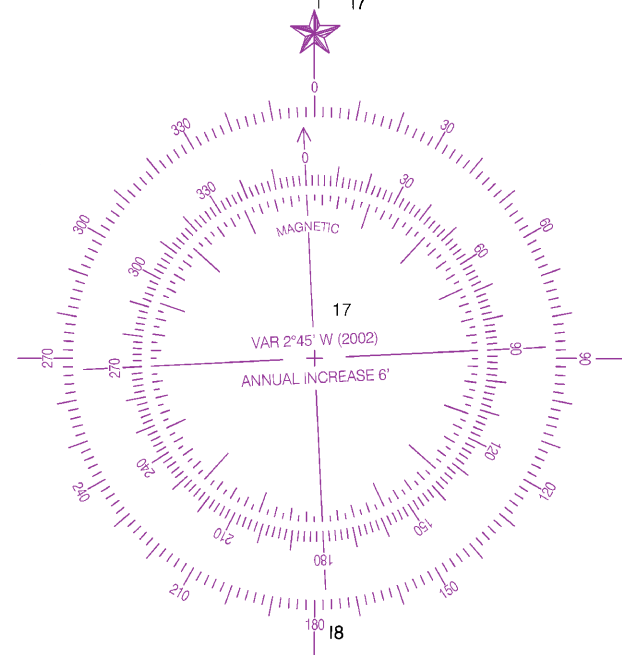
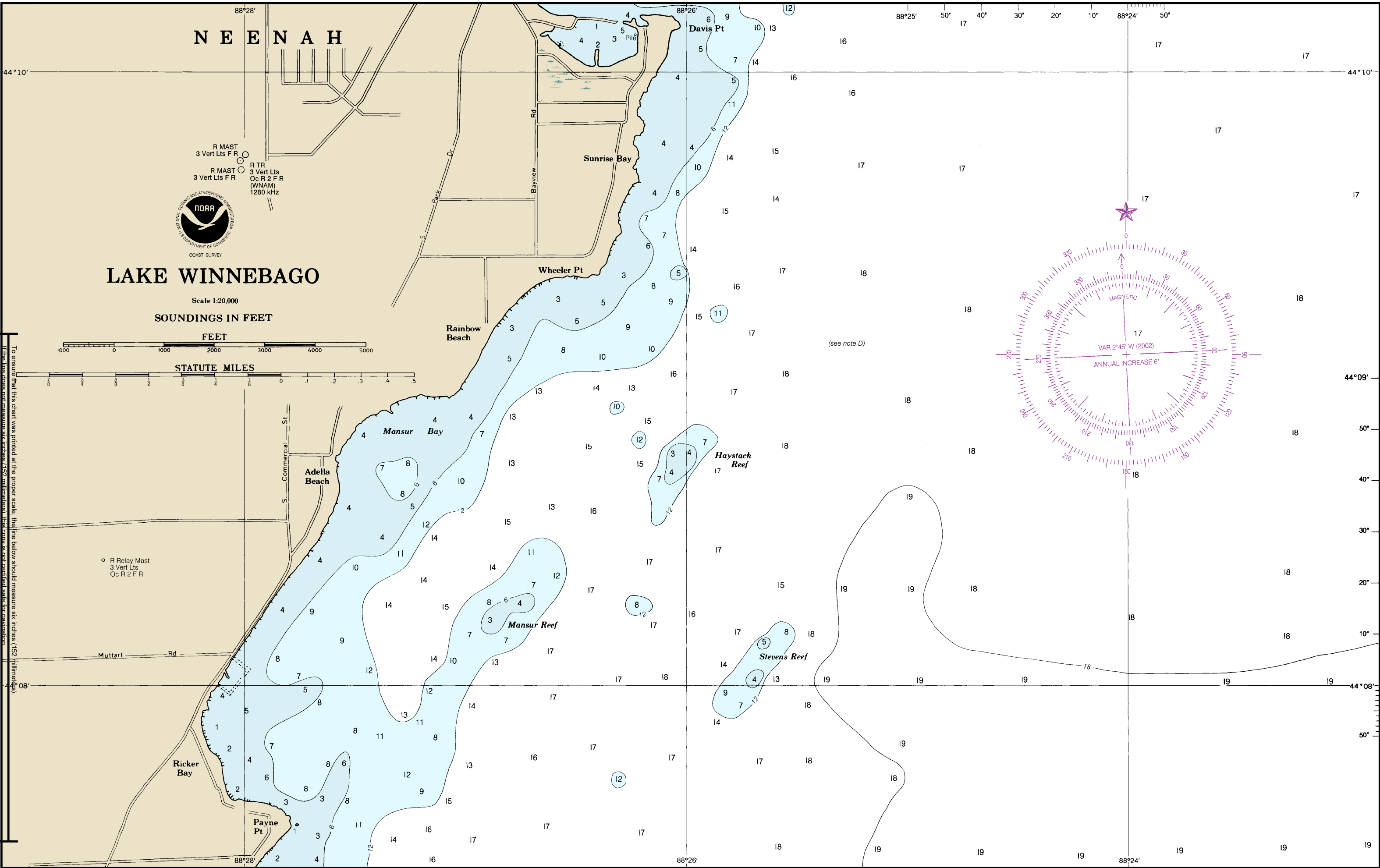
To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).

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JOINS 17

If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

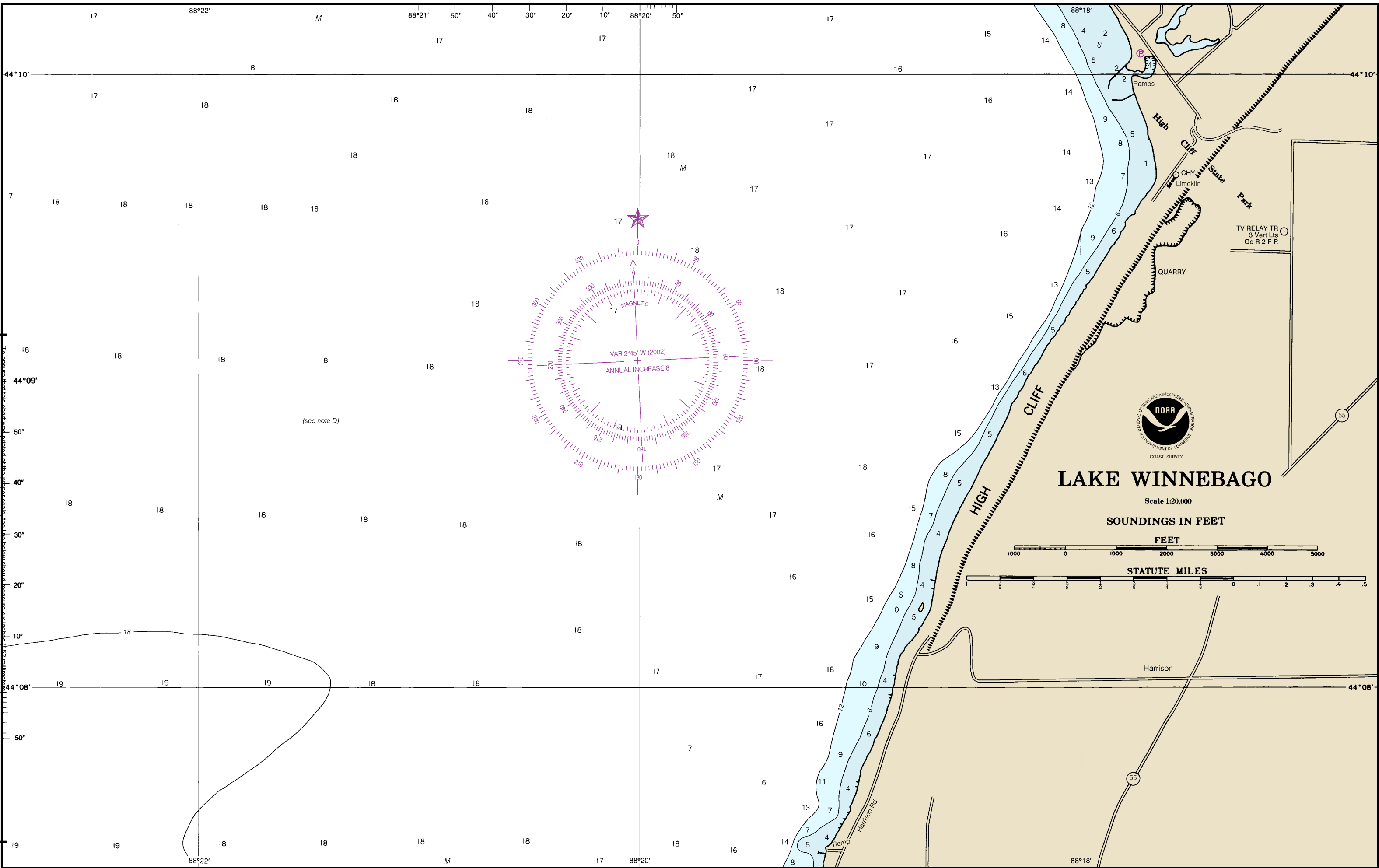


14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

JOINS 18

JOINS 19

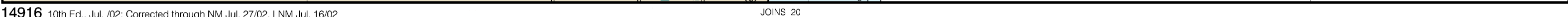
Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)



14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

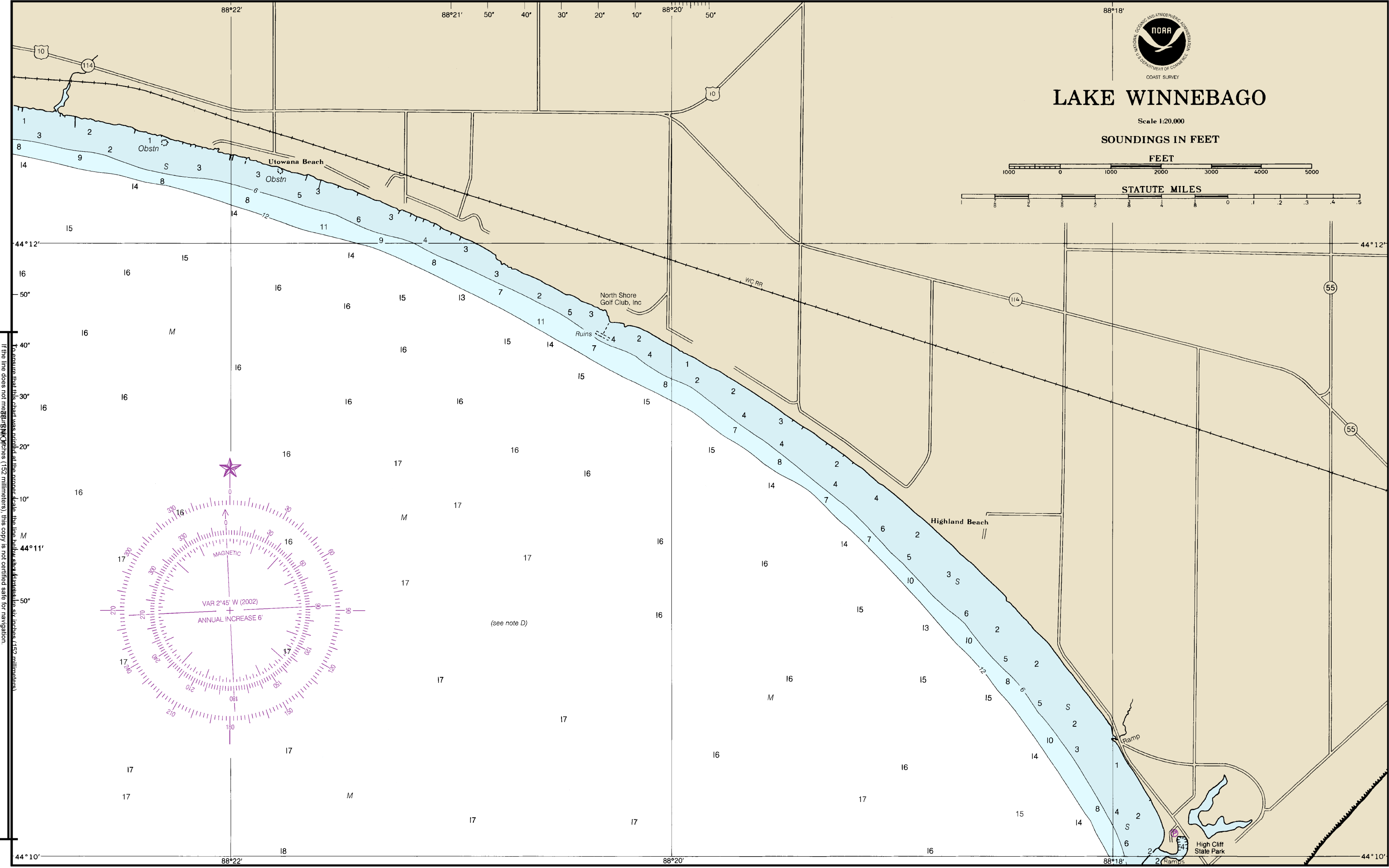
Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

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Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

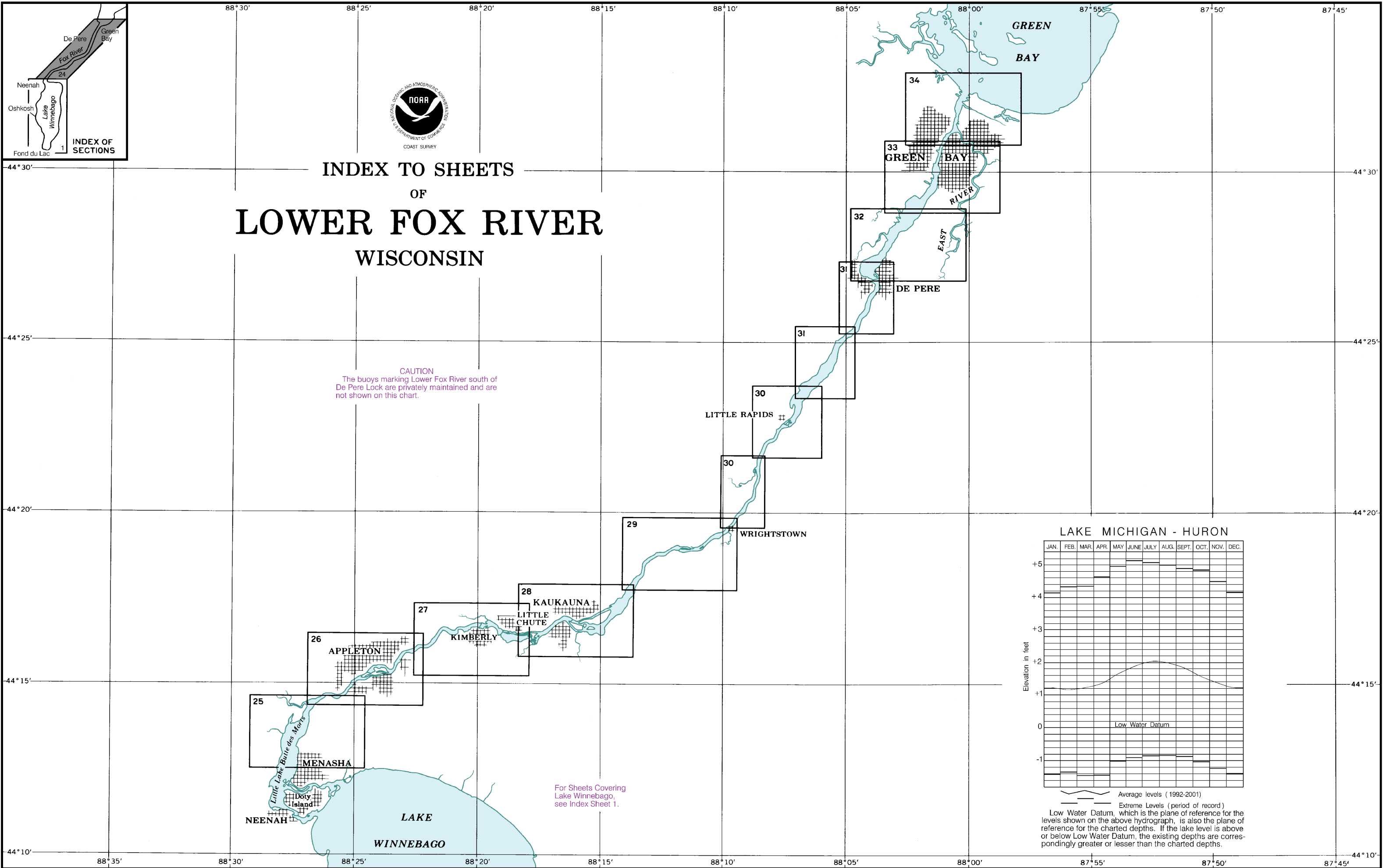
If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation



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Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

JOINS 21

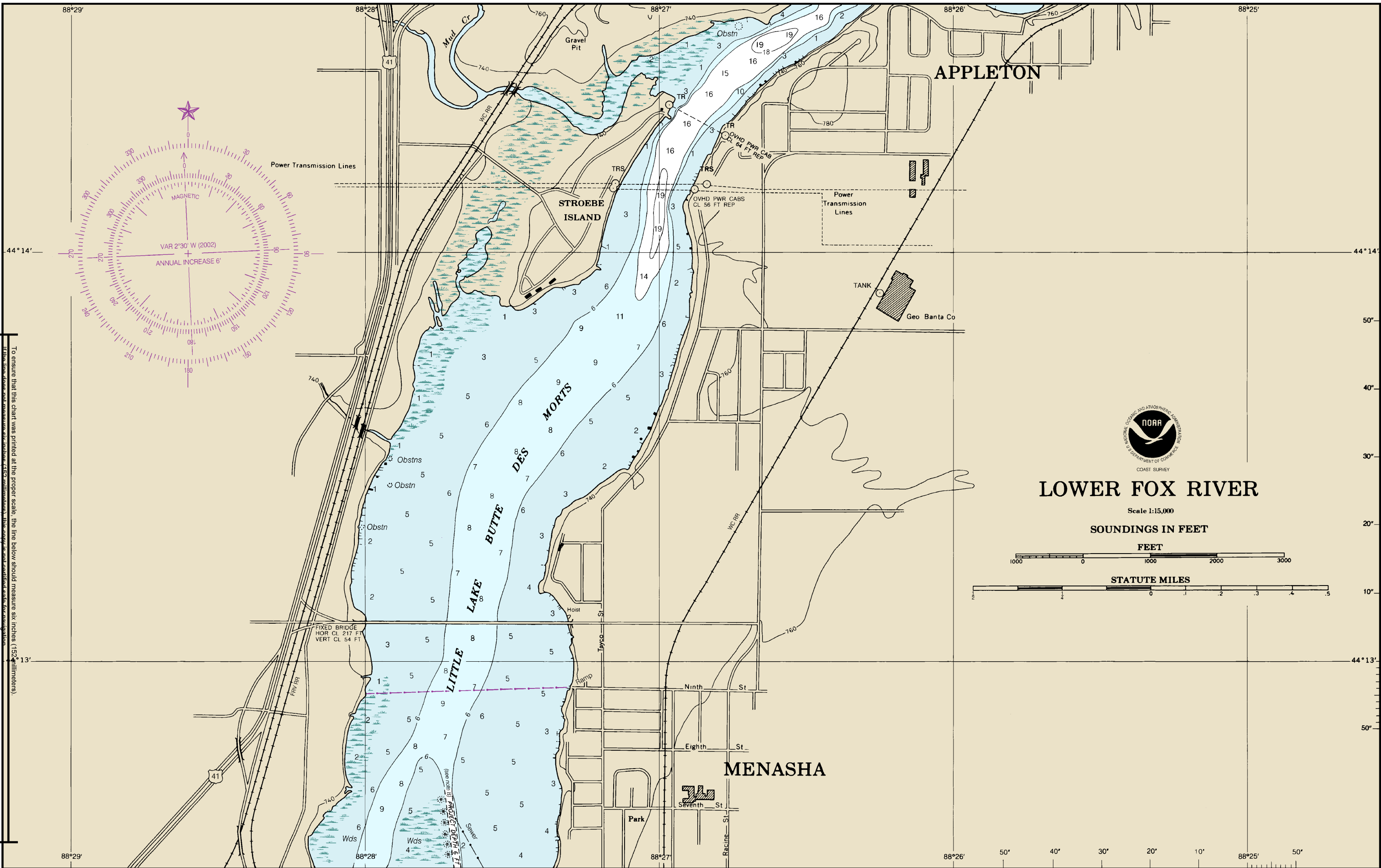


14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

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14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

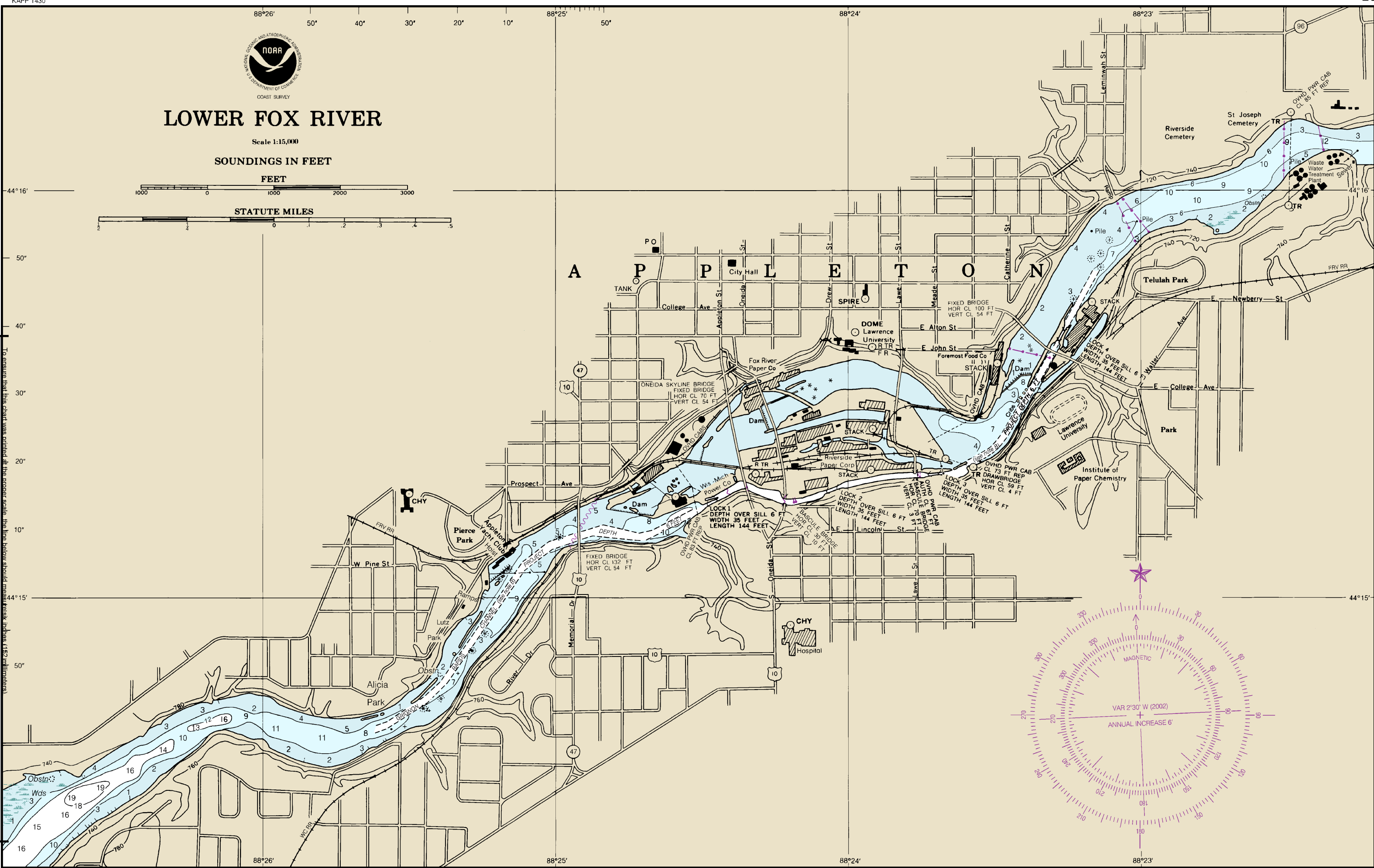
CONTINUED ON 22

Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
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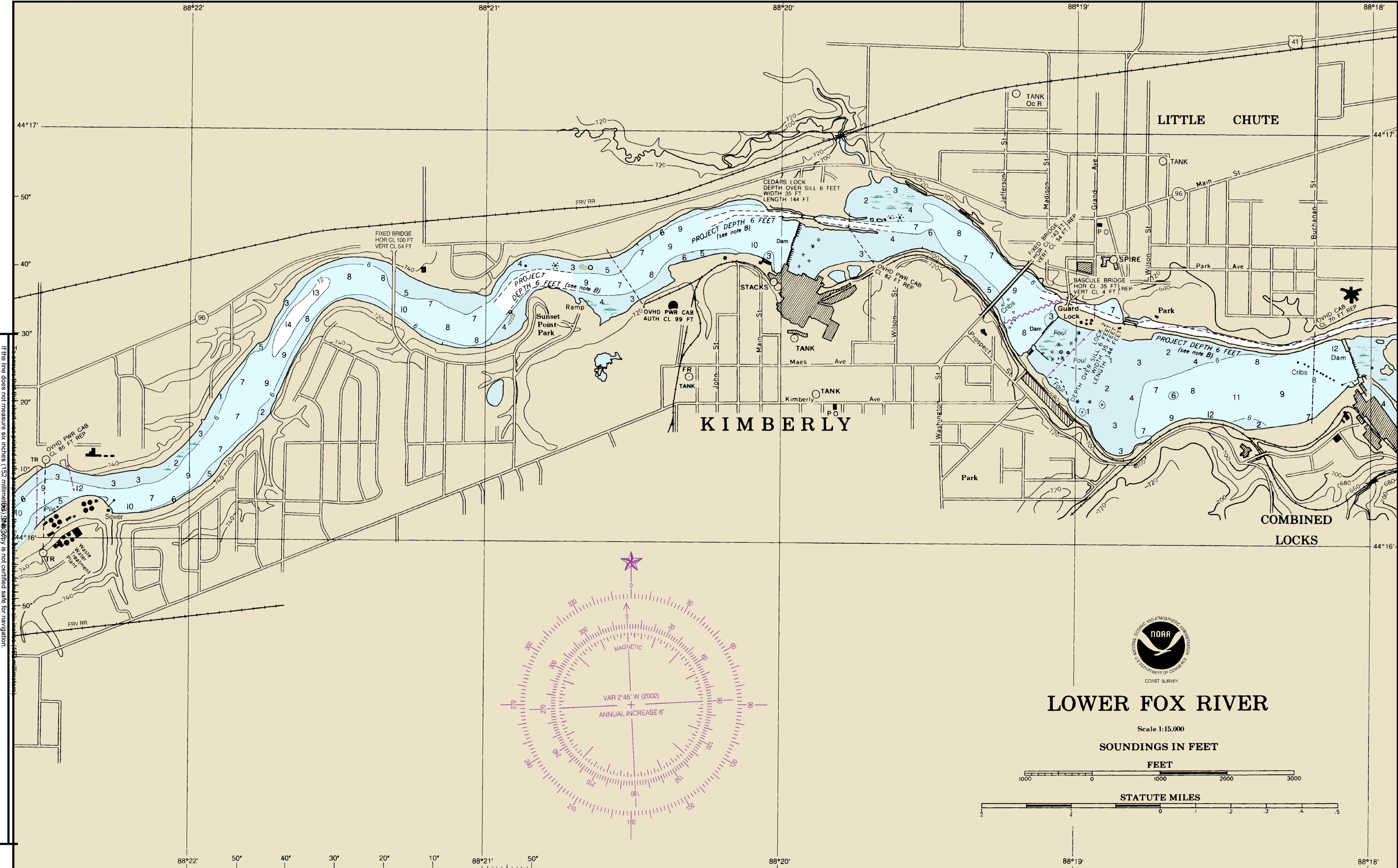
To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).

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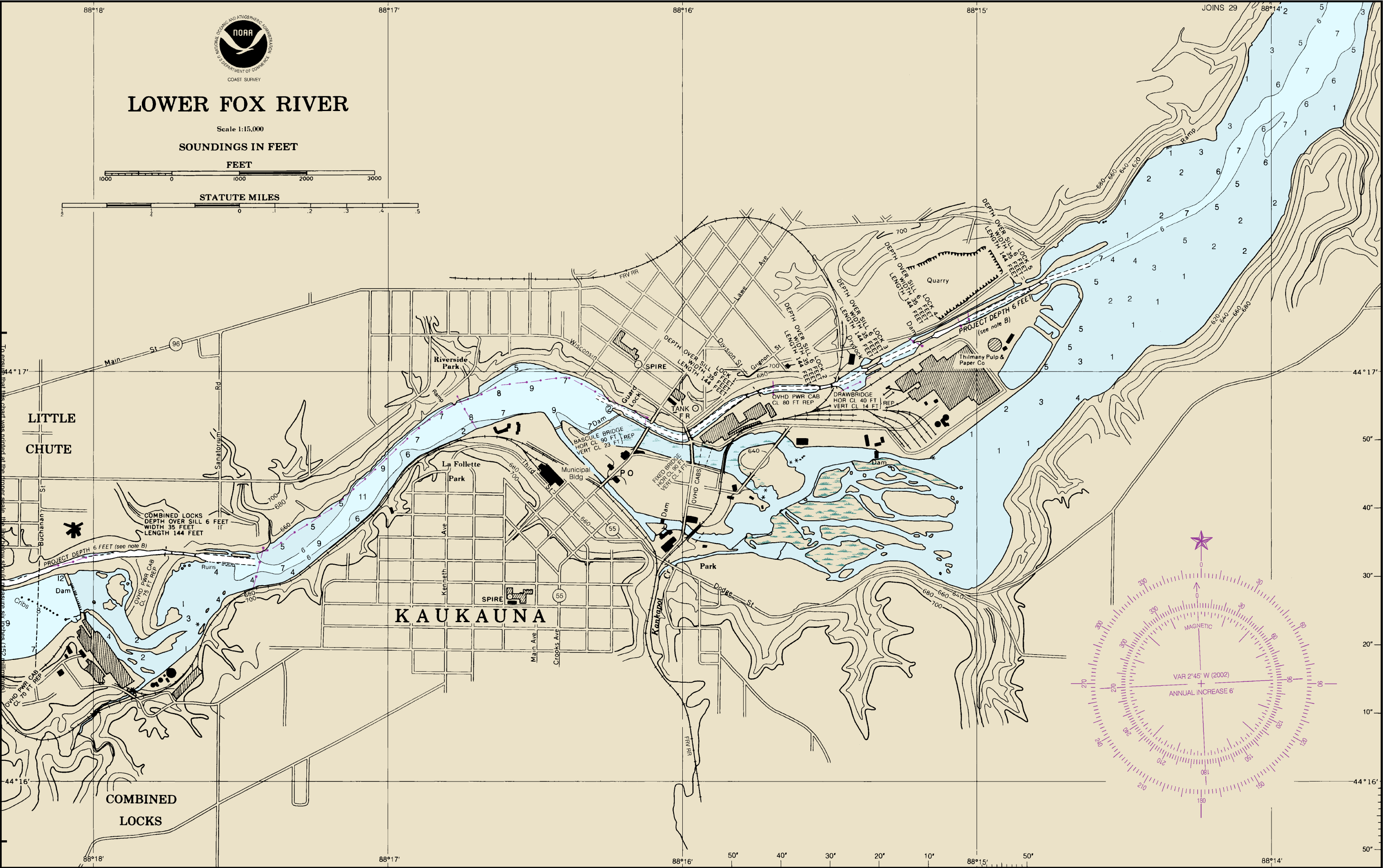


14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02
Last Correction: 3/5/2014. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

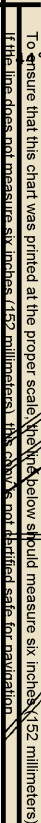
To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
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Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

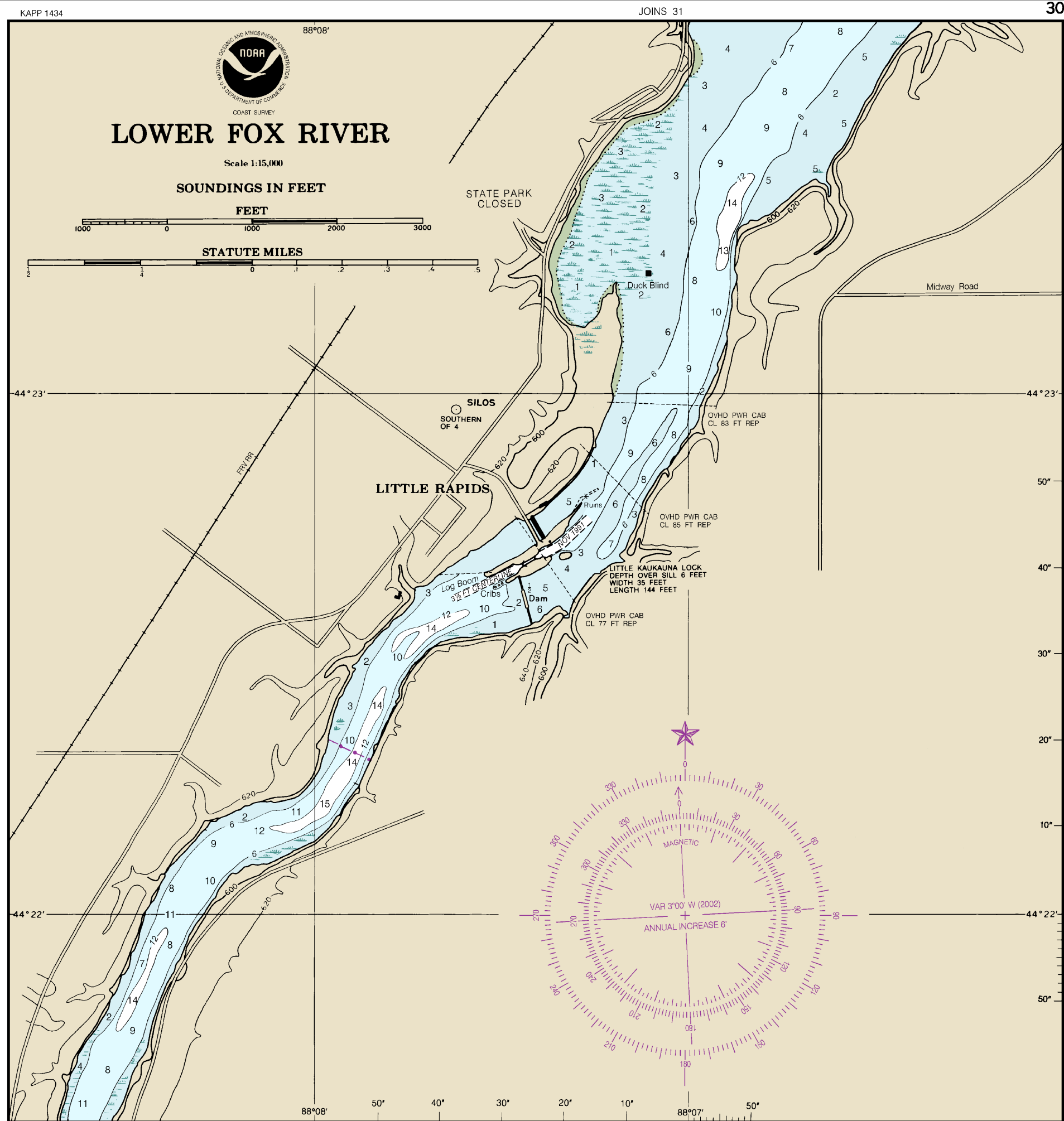
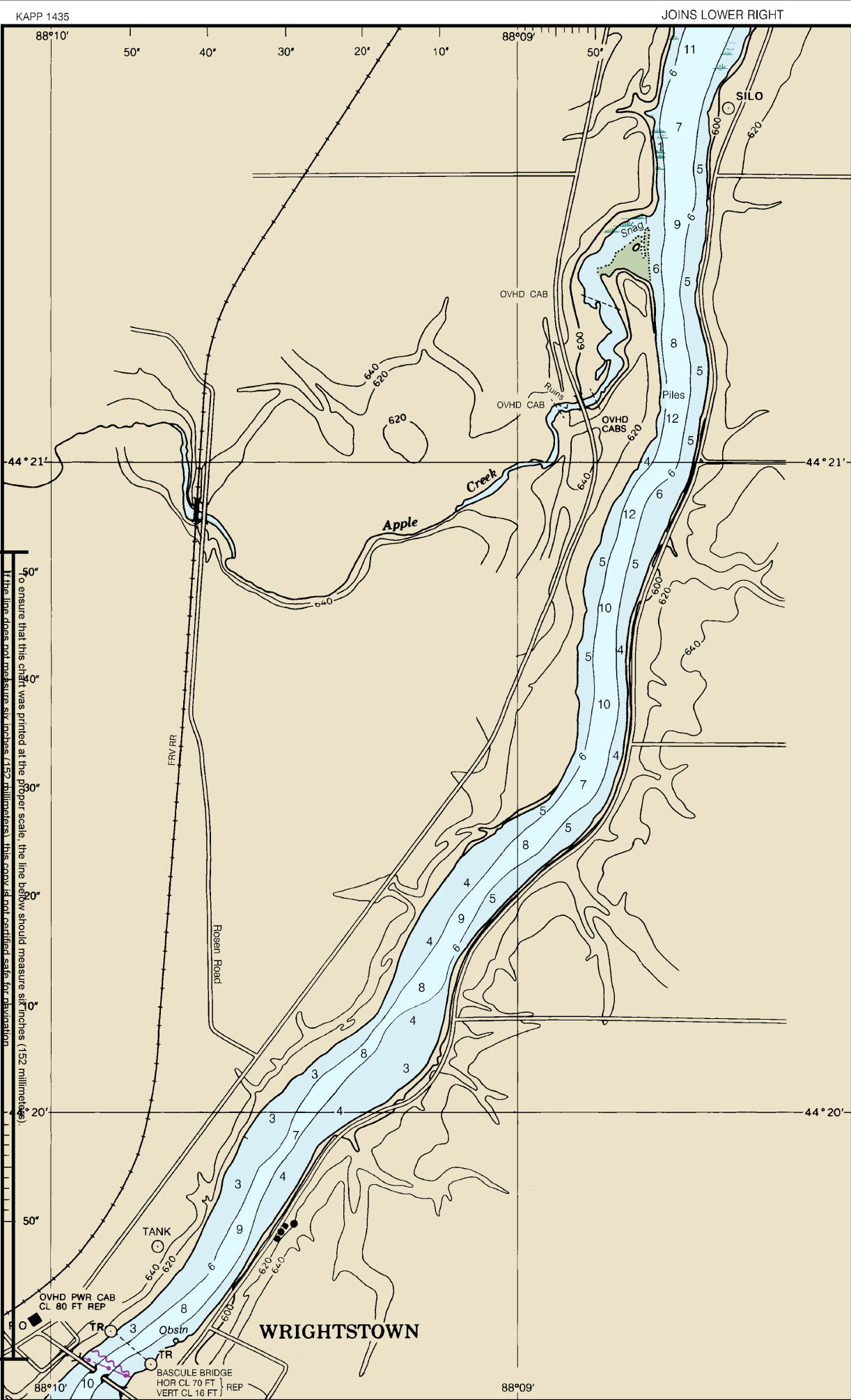


14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02
Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

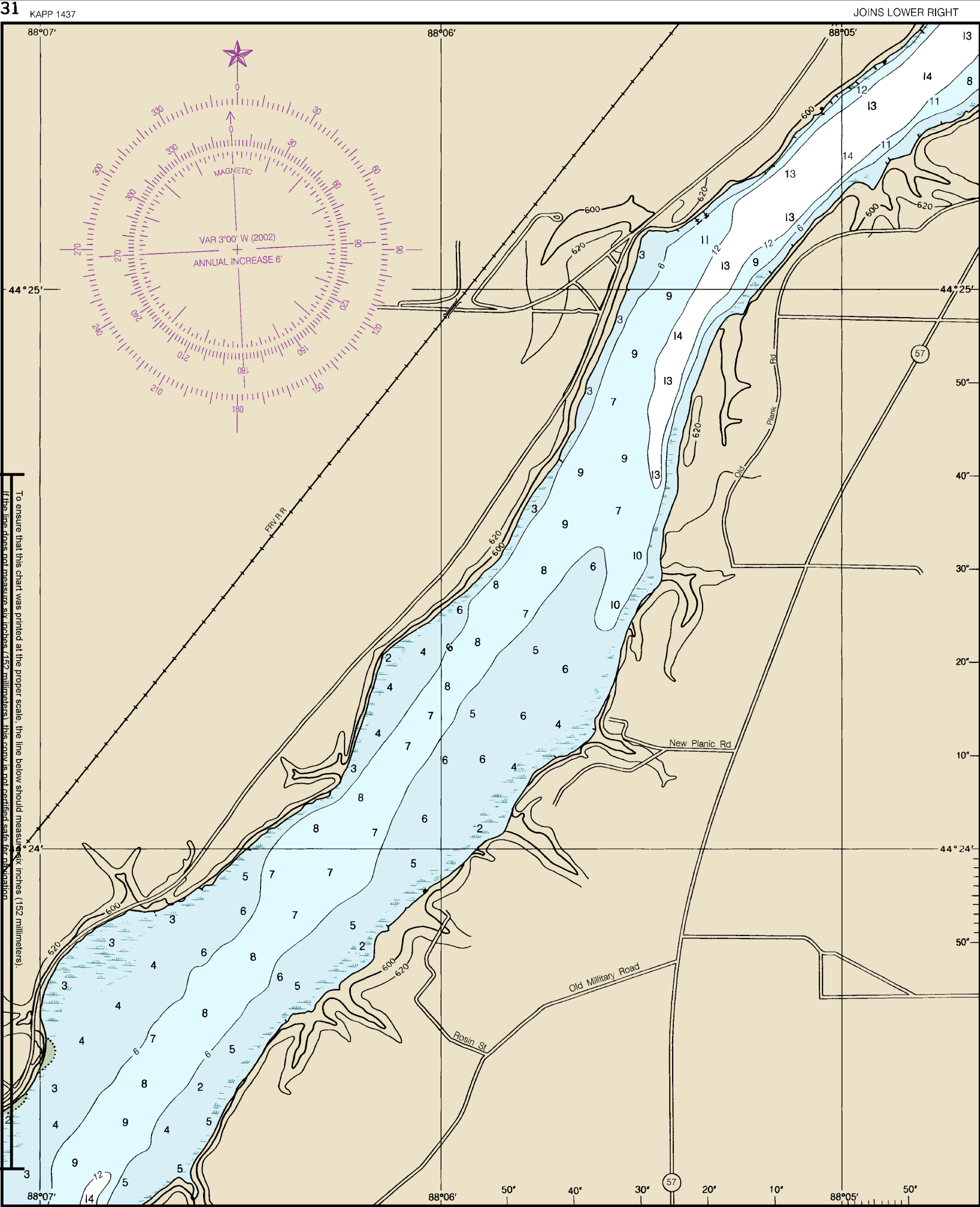


Last Correction: 7/18/2002. Cleared through:
 LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

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14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02
Last Correction: 7/18/2002. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)



JOINS 30 14916 10th Ed., Jul. '02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

Last Correction: 5/7/2013. Cleared through:

LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

JOINS UPPER LEFT

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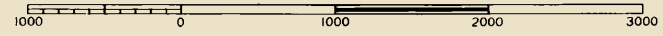


LOWER FOX RIVER

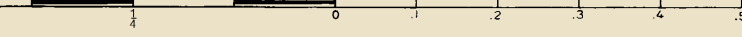
Scale 1:15,000

SOUNDINGS IN FEET

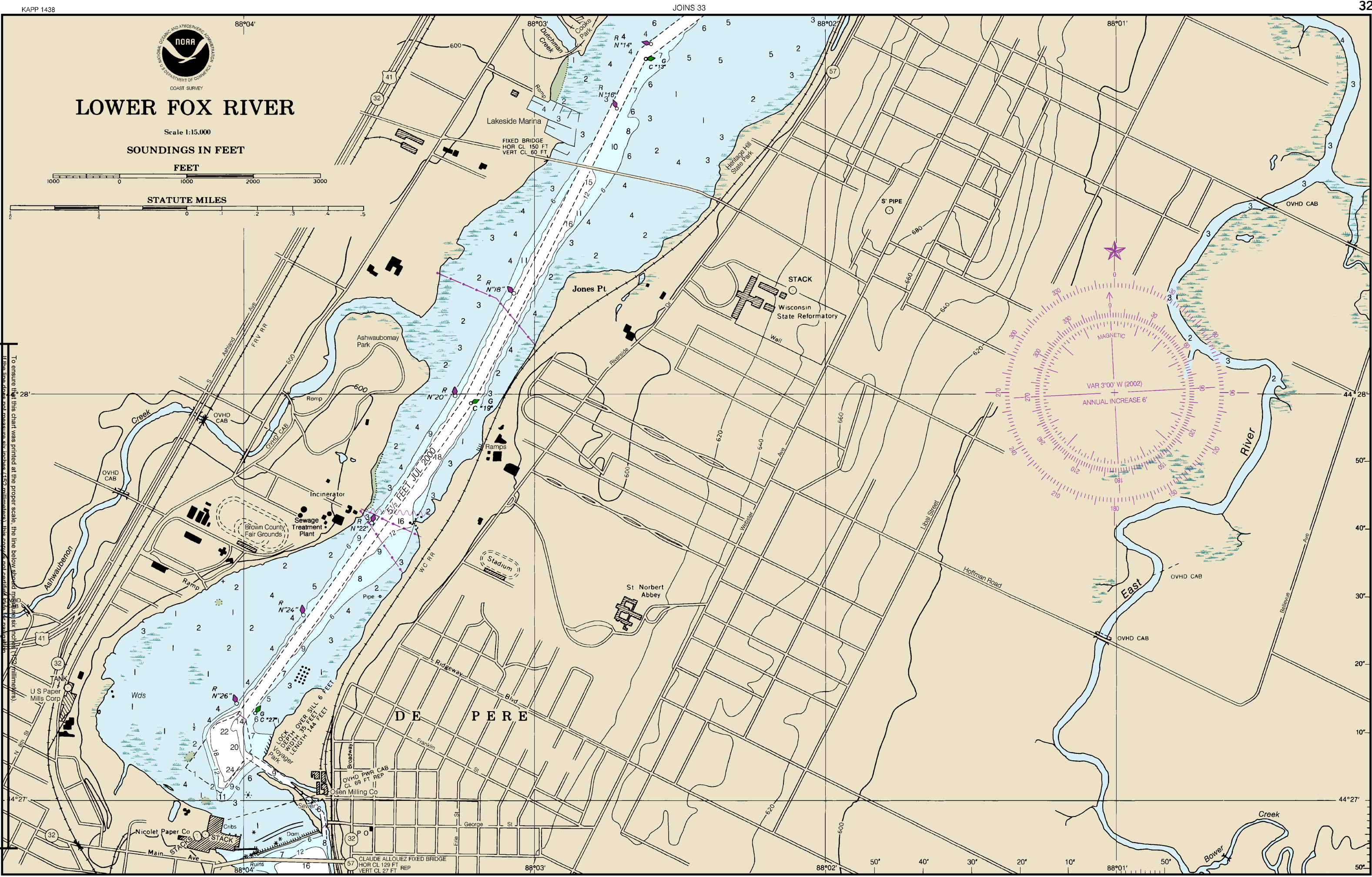
FEET



STATUTE MILES



To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
If the line does not measure six inches (152 millimeters), this copy is not certified safe for navigation.

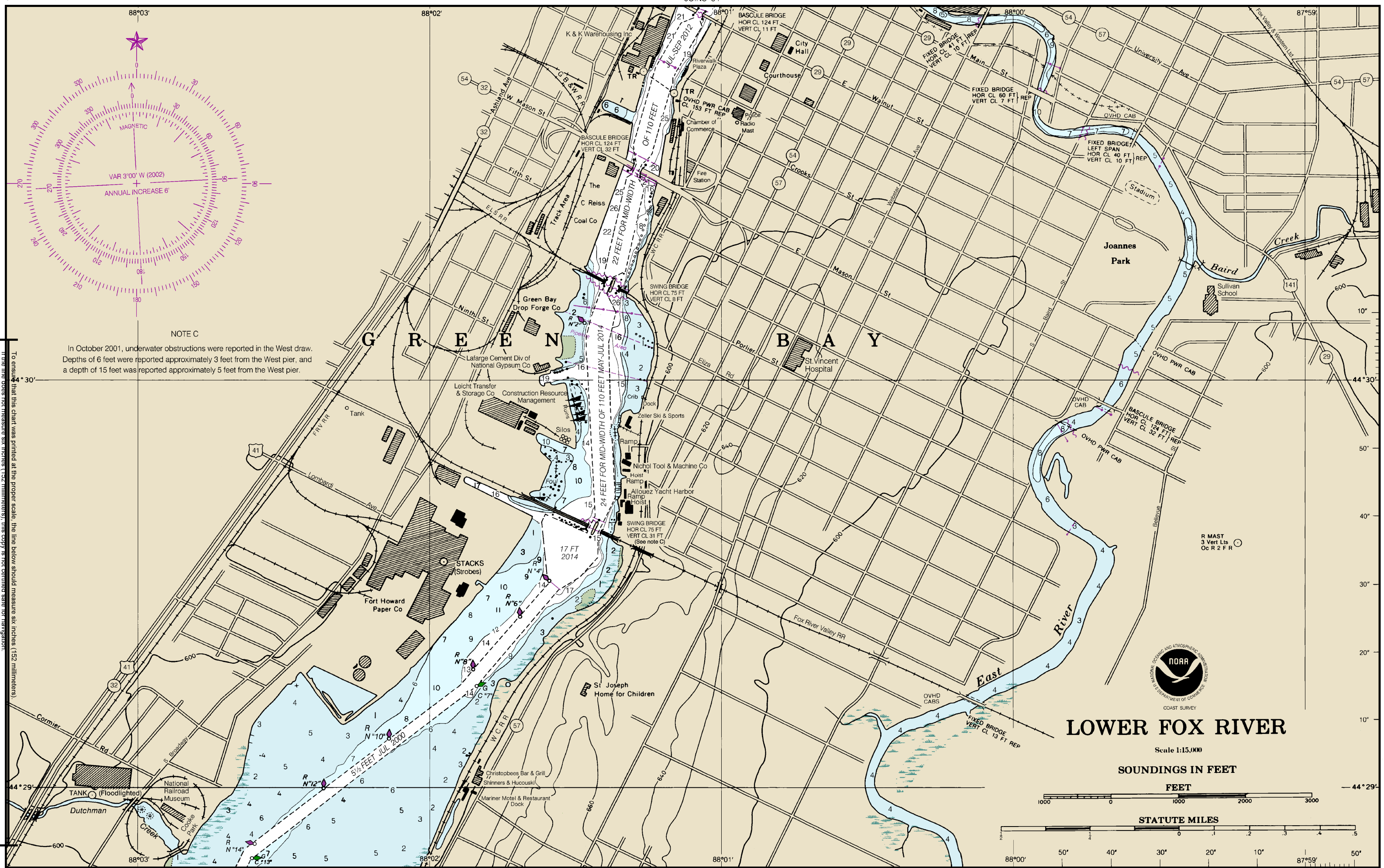


14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02

JOINS 31

Last Correction: 5/7/2013. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

To ensure that this chart was printed at the proper scale, the line below should measure six inches (152 millimeters).
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14916 10th Ed., Jul. /02; Corrected through NM Jul. 27/02, LNM Jul. 16/02 JOINS 32

Last Correction: 3/10/2015. Cleared through:
LNM: 3715 (9/15/2015), NM: 3915 (9/26/2015), CHS: 0815 (8/28/2015)

88°02'

88°01'

88°00'

87°59'

87°58'



LOWER FOX RIVER

Scale 1:15,000

SOUNDINGS IN FEET

FEET

1000 0 1000 2000 3000

STATUTE MILES

0 .1 .2 .3 .4 .5

141

Velo Ave

MAGNETIC

VAR 3°00' W (2002)
ANNUAL INCREASE 6'

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

460

470

480

490

500

510

520

530

540

550

560

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650

660

670

680

690

700

710

720

730

740

750

760

770

780

790

800

810

820

830

840

850

860

870

880

890

900

910

920

930

940

950

960

970

980

990

1000

1010

1020

1030

1040

1050

1060

1070

1080

1090

1100

1110

1120

1130

1140

1150

1160

1170

1180

1190

1200

1210

1220

1230

1240

1250

1260

1270

1280

1290

1300

1310

1320

1330

1340

1350

1360

1370

1380

1390

1400

1410

1420

1430

1440

1450

1460

1470

1480

1490

1500

1510

1520

1530

1540

1550

1560

1570

1580

1590

1600

1610

1620

1630

1640

1650

1660

1670

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2100

2110

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2150

2160

2170

2180

2190

2200

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2220

2230

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2250

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2270

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2480

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2660

2670

2680

2690

2700

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2730

2740

2750

2760

2770

2780

2790

2800

2810

2820

2830

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2890

2900

2910

2920

2930

2940

2950

2960

2970

2980

2990

3000

3010

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3030

3040

3050

3060

3070

3080

3090

3100

3110

3120

3130

3140

3150

3160

3170

3180

3190

3200

3210

3220

3230

3240

3250

3260

3270

3280

3290

3300

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3520

3530

3540

3550

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3570

3580

3590

3600

3610

MARINE WEATHER INFORMATION

DECODE FOR LAKE AND SEAWAY MARINE FORECASTS (MAFOR)

MAFOR YYG ₁ G ₁ / (NAME OF LAKE) 1GDF _m W ₁										
KEYWORD (Indicating Marine Forecast)	DAY OF MONTH (GMT)	TIME (GMT) FORECAST PERIOD BEGINS	SOLIDUS	NAME OF LAKE OR SEAWAY*	GROUP INDICATOR	FORECAST PERIOD	WIND DIRECTION	WIND SPEED	FORECAST WEATHER	HEIGHT OF WAVES IN FEET AT END OF THE MESSAGE FOR EACH LAKE, FOR THE ENTIRE PERIOD
MAFOR	06	G ₁ G ₁	/	SUPERIOR *	1	G	D	F _m	W ₁	WAVES 5 TO 10 FEET

G - FORECAST PERIOD	D - WIND DIRECTION	F _m - WIND SPEED	W ₁ - FORECAST WEATHER
0 - Conditions at beginning of forecast period 1 - Valid for 3 hours 2 - Valid for 6 hours 3 - Valid for 9 hours 4 - Valid for 12 hours 5 - Valid for 18 hours 6 - Valid for 24 hours 7 - Valid for 48 hours 8 - Valid for 72 hours 9 - Occasionally	0 - Calm 1 - Northeast 2 - East 3 - Southeast 4 - South 5 - Southwest 6 - West 7 - Northwest 8 - North 9 - Variable	0 - 0 to 10 knots 1 - 11 to 16 knots 2 - 17 to 21 knots 3 - 22 to 27 knots 4 - 28 to 33 knots 5 - 34 to 40 knots 6 - 41 to 47 knots 7 - 48 to 55 knots 8 - 56 to 63 knots 9 - 64 knots & above	0 - Moderate or good visibility, more than 3 nautical miles 1 - Risk of accumulation of ice on superstructures (Temp. 23° to 32° F.) 2 - Strong risk, accumulation of ice on superstructures (Temp. below 23°F.) 3 - Mist (visibility ¾ to 3 nautical miles) 4 - Fog (visibility less than ¾ nautical miles) 5 - Drizzle 6 - Rain 7 - Snow, or rain and snow 8 - Squally weather with or without showers 9 - Thunderstorms

*Statement in plain language of Gale or Storm Warnings, if any are in effect, will follow the name of lake or seaway. Small Craft Advisories are not included in Mafor broadcasts. Time of warnings are in Eastern Standard Time (EST).

The forecast 1GDF_mW₁ may be repeated as many times as necessary to describe the changes in wind and weather expected in a given area during the 24-hour forecast period. The forecast 1GDF_mW₁ in which G=1-8, refers to the forecast weather commencing at the time given in the group YYG₁G₁/ and continuing through the period indicated by G. Subsequent 1GDF_mW₁ (G=1-8) indicate the period of time that the described weather is forecast to persist, commencing at the end of the period specified in the preceding group 1GDF_mW₁ (G=1-8). Any forecast 1GDF_mW₁ (G=1-8) may be followed by 1GDF_mW₁ (G=9); in such cases, G=9 indicates a phenomenon forecast to occur occasionally in the forecast period. On occasion, plain language words are used to describe weather conditions not easily described by the code tables; times are stated in EST.

Wave forecast indicates the expected wave heights at the downwind end or side of the lake; this being the area where the wave height buildup is greatest. Times in EST. Wave heights are usually specified as a range for the 24-hour period, but significant changes (generally variations of more than 5 feet) will be stated.

Forecast periods begin at 0000, 0600, 1200 and 1800 Greenwich Mean Time; equivalent Eastern Standard Times are 7 pm, 1 am, 7 am and 1 pm, respectively.

SCHEDULED MAFOR WEATHER FORECASTS (BY MARINE RADIOTELEPHONE STATIONS)				COAST GUARD RADIO BROADCAST NOTICES TO MARINERS AND MARINE WEATHER			
CITY & STATION	FREQUENCY	SCHEDULE (EST)	LOCATION	CITY & STATION	FREQUENCY	SCHEDULE (EST)	LOCATION
Pickford, MI KIL 923	156.85 MHz (Chan. 17)	12:02 & 6:02 AM & PM		Sturgeon Bay, MI NMP-9	157.1 MHz (Chan. 22)	Every 3 hours beginning at 8:55 PM	44°54'06"N 87°22'05"W
Rogers City, MI WLC	2514 kHz (Chan. 57) 4369.8 kHz 161.9 MHz (Chan. 26)	6:17 AM & PM 12:17 PM EST	45°24'19"N 83°46'16"W	Two Rivers, WI NMP-9	157.1 MHz (Chan. 22)	Every 3 hours beginning at 8:55 PM	44°08'08"N 87°33'05"W
Sturgeon Bay, WI KVV 604	161.850 MHz (Chan. 17)	12:02 & 6:02 AM & PM		Milwaukee, WI NMP-9	157.1 MHz (Chan. 22)	Every 3 hours beginning at 8:55 PM	43°06'06"N 87°53'18"W
Port Washington, WI KVV 605	161.850 MHz (Chan. 17)	12:02 & 6:02 AM & PM	43°20'36"N 87°52'36"W				
Emergency and Calling Frequency: 2182 kHz (Chan. 51) & 156.8 MHz (Chan. 16) VHF				Gale and storm warnings are broadcast on receipt by selected U.S. Coast Guard Stations.			
CONTINUOUS WEATHER BROADCASTS (By National Weather Service Radio Stations)				MARINE WEATHER FORECASTS National Weather Service			
CITY	STATION	FREQUENCY	SCHEDULE	CITY	TELEPHONE NUMBER	SCHEDULE	
Green Bay, WI	KIG-65	162.55 MHz	24 hours a day	Green Bay, WI	920-494-5845	8 AM - 4 PM M-F Recorded forecasts only at other times.	
Sheboygan, WI	WWG-91	162.425 MHz	24 hours a day	Milwaukee, WI	414-744-8000* 262-965-2071	24 HOURS NOON - 3 PM	
Marine Weather Services Charts — Published by NOAA, National Weather Service—Two of the series of 15 charts covering U.S. Waters pertain to the Great Lakes. One covers Lakes Huron, Erie and Ontario, the other Lakes Michigan and Superior. Each lists Radio Broadcast Stations that carry Marine Weather Information, their schedules and the location of their antennas. The entire series of charts is sold by the National Aeronautical Charting Office, FAA Distribution Division (AVN-530), Riverdale, Maryland 20737-1199.				* Recorded forecasts only.			
				Weather forecasts and warnings may also be received from Standard Broadcast Stations (AM & FM). Consult local newspapers for broadcast schedules.			

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